Limnological and Biological Data from 41 Lakes along the Ingraham Trail, Northwest Territories, 1979-80

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Canadian Data Report of
Fisheries and Aquatic Sciences 473

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by

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ABSTRACT

Roberge, M.M., and D.V. Gillman. 1984. Limnological and biological data from 41 lakes along the Ingraham Trail, Northwest Territories, 1979-80. Can. Data Rep. Fish. Aquat. Sci. 473: iv + 56 p.

Limited limnological and biological baseline data collected from 41 lakes along the Ingraham Trail Highway northeast of Yellowknife, Northwest Territories in 1979-80 are presented. Limnological data include bathymetric maps and some physical and chemical characteristics of the lakes surveyed. Biological data include length, weight, age and sex characteristics of the fish species sampled.

Keywords: catch/effort; catch composition; fishery surveys; gillnetting; lake morphology; oxygen/temperature profiles; recreational waters.

RESUME

Roberge, M.M., and D.V. Gillman. 1984. Limnological and biological data from 41 lakes along the Ingraham Trail, Northwest Territories, 1979-80. Can. Data Rep. Fish. Aquat. Sci. 473: iv + 56 p.

Cet ouvrage fait état de données limnologiques et biologiques de référence recueillies dans 41 lacs le long de la route Ingraham Trail, au nord-est de Yellowknife (Territoires du Nord-Ouest), en 1979 et en 1980. Les données limnologiques comprennent des cartes bathymétriques et des caractéristiques physiques et chimiques des lacs étudiés. Les données biologiques portent sur la longueur, le poids, l'âge et les caractéristiques sexuelles des espèces de poisson échantillonnées.

Mots-clés: prises/effort; composition des prises; enquêtes sur la pêche; pêche au filet maillant; morphologie du lac; profils d'oxygène et de température; eaux utilisées à des fins récréatives.

INTRODUCTION

Road access sport fisheries in the vicinity of Yellowknife, Northwest Territories, are limited since road development in the area is not extensive (Falk 1979; Falk et al. 1980; R.W. Moshenko, Fisheries and Oceans, Winnipeg, personal communication) (Fig. 1). Existing road access sport fisheries in the vicinity of Yellowknife include the lakes along the Ingraham Trail Highway, which is located northeast of Yellowknife (Fig. 2). Certain of the larger lakes along the Ingraham Trail receive heavy angling pressure from local residents and non-residents (Falk 1981; R.W. Moshenko, Fisheries and Oceans, Winnipeg, personal communication). However many of the smaller lakes adjacent to the trail are subjected to little or no exploitation.

In 1979 a two-year study was initiated to investigate the possibility of creating new fishing opportunities in these smaller lakes along the Ingraham Trail by dispersement of fishing effort over a wider area and/or the creation of new angling opportunities. Limited baseline limnological and biological data was collected from forty-one (41) lakes along the trail. These data are presented in this report in tabular and graphic form.

STUDY AREA

The Ingraham Trail is located northeast of Yellowknife and extends 65 km to Tibbet Lake (Fig. 2). The topography is typically Precambrian Shield with low, rocky hills, sparsely covered with black spruce interspersed with poplar and birch. Healey and Woodall (1973) provide a brief account of the geology and climate of the general area around Yellowknife. The names given to each lake are common names only and were assigned by DFO personnel during the course of the study.

METHODS AND MATERIALS

LIMNOLOGY

Depth soundings of lakes <2 m deep were made using a lead line marked in meters. Lakes >2 m deep were sounded by running transects across the lake using a Lowrance Model D51 depth sounder. Depth soundings were plotted for each lake and bathymetric contours were drawn at 1 or 2 m intervals. Lower Puddle, Rob, Sedge, Trail, and Upper Puddle lakes were not surveyed due to their inaccessibility and/or shallow depths.

Surface temperatures were taken using a pocket thermometer and a Wahl direct reading thermistor. Temperature was recorded at 1 m intervals using a Yellow Springs Model D400 oxygen-temperature meter. Dissolved oxygen from surface water was determined using a Hach kit (Model AL-36B). Dissolved oxygen readings were taken at 1 m intervals using a Yellow Springs Model D400 oxygen-temperature meter in order to construct dissolved oxygen profiles. Water transparency was determined using a Secchi disc (20 cm) while pH was determined with a Beckman pH meter.

BIOLOGY

At least one experimental gillnet set was made at each lake surveyed in 1979 with a maximum depth >1.0 m. In 1980, gillnet sets were made only in those lakes with a maximum depth >3.0 m. Experimental gillnets of varying lengths were composed of five panels, of 38, 64, 89, 114 and 139 mm mesh size (stretched measure) respectively. A Swedish gillnet (19, 38, 64, 92 and 121 mm mesh) was set only in Davidson, Quarry and Upper Cabin lakes. Catch was recorded by mesh size and by species. Fish were sampled for fork length (± 1 mm), round weight (± 50 g), age (scales), sex and stage of maturity. Sex and relative stage of maturity were determined by examination of the gonads. Relative stages of maturity were coded according to the stages described in Falk et al. (1982).

Scales were taken from lake whitefish, northern pike, white sucker, lake cisco and walleye as described by Hatfield et al. (1972). Lake chub and ninespine sticklebacks were not aged. To date, results of the age determinations are not complete.

A beach seine (10 mm mesh) was used to catch small fish which would otherwise escape the experimental gillnets. Minnow traps and dipnets were used to capture these fish in the instances when the shoreline or depth precluded seining. Only a limited number of these smaller fish were sampled.

Benthic samples were collected using an Eckman dredge (15 cm square) and organisms were identified in the field to various taxonomic groups, depending on difficulty of identification. Plankton samples collected with a Wisconsin plankton net and preserved in 10% formalin are pending analysis.

Scientific names for fish species from the Ingraham Trail lakes follow Scott and Crossman (1973) and McPhail and Lindsey (1970) as: lake whitefish, Coregonus clupeaformis (Mitchill); northern pike, Esox lucius (Linnaeus); white sucker, Catostomus commersoni (Lacépède); cisco, Coregonus artedii Lesueur; walleye, Stizostedion vitreum vitreum (Mitchill); lake chub, Couesius plumbeus (Agassiz); and ninespine stickleback, Pungitius pungitius (Linnaeus).

ACKNOWLEDGMENTS

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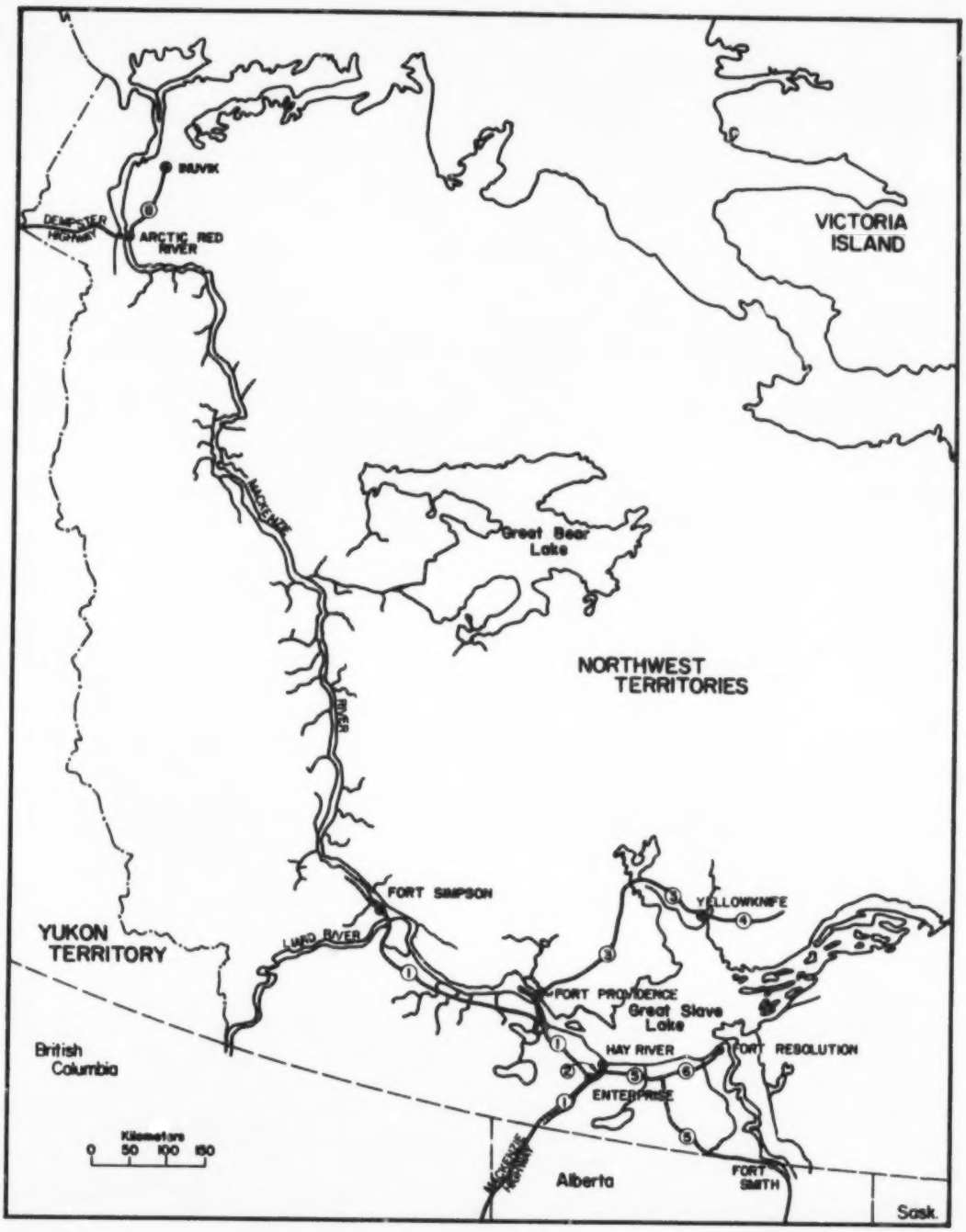


Fig. 1. Map of the Northwest Territorial Highway system.

KEY TO LIST OF LAKES SHOWN ON FIGURE 2

1. Yellowknife River
2. Split (A and B)
3. Falk
4. Tom
5. Spot
6. Throat
7. Sedge
8. Tasha
9. Float
10. Loon
11. Victor
12. Richard
13. Rod
14. William
15. Bonnie
16. Mist
17. Quarry
18. Greater Scaup
19. Lesser Scaup
20. Upper Cabin
21. Lower Cabin
22. Stewart
23. Hollow
24. Stirling
25. Annemieke
26. Barbara
27. Davidson
28. Mallard
29. Trail
30. Ceejay
31. Aron
32. Brent
33. Blake
34. Lower Puddle
35. Upper Puddle
36. Amy
37. Rob
38. Boss
39. Muskeg
40. Peninsula
41. Beaver

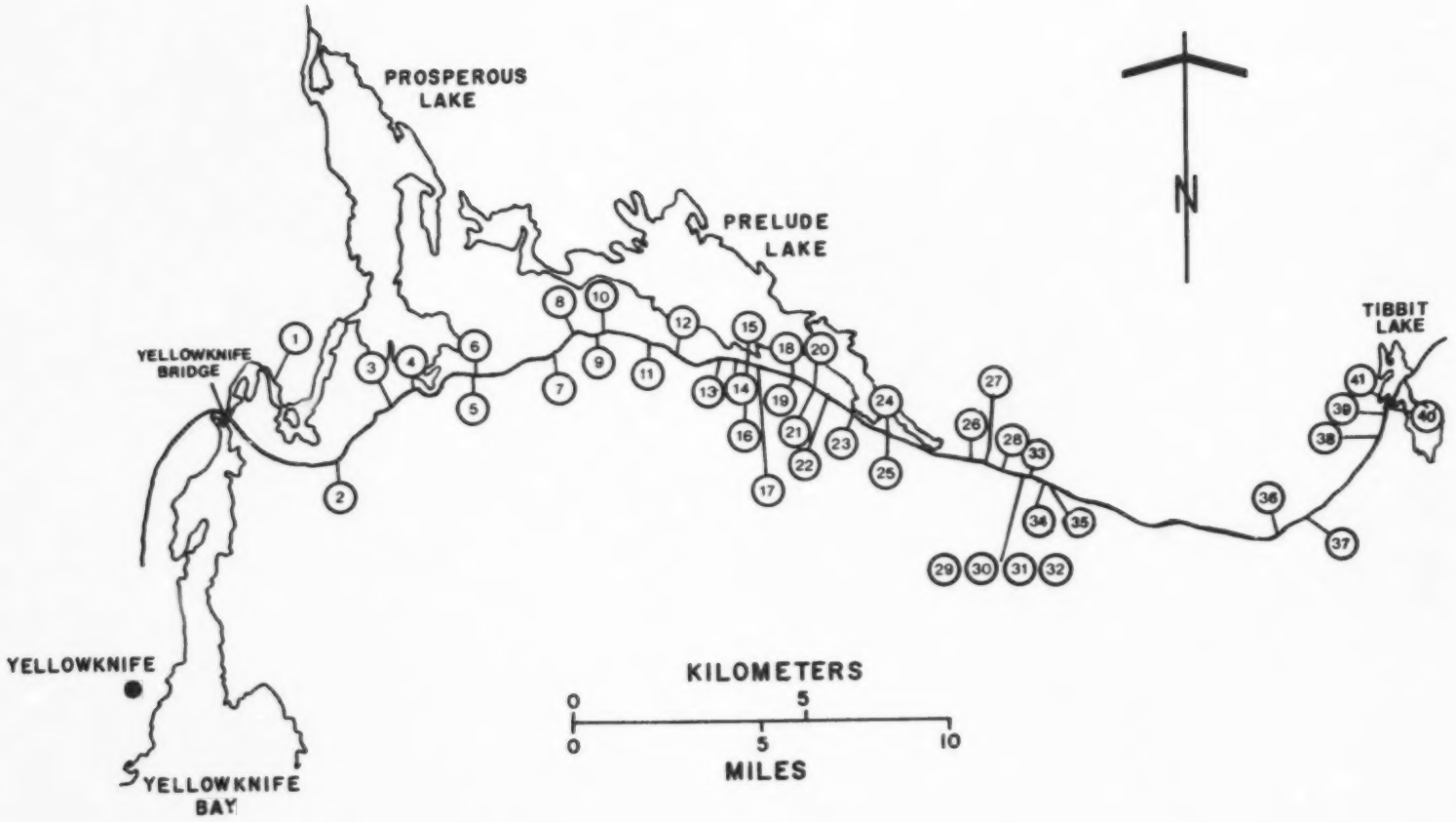


Fig. 2. Map of the Ingraham Trail Highway showing the locations of the lakes surveyed during 1979-80.

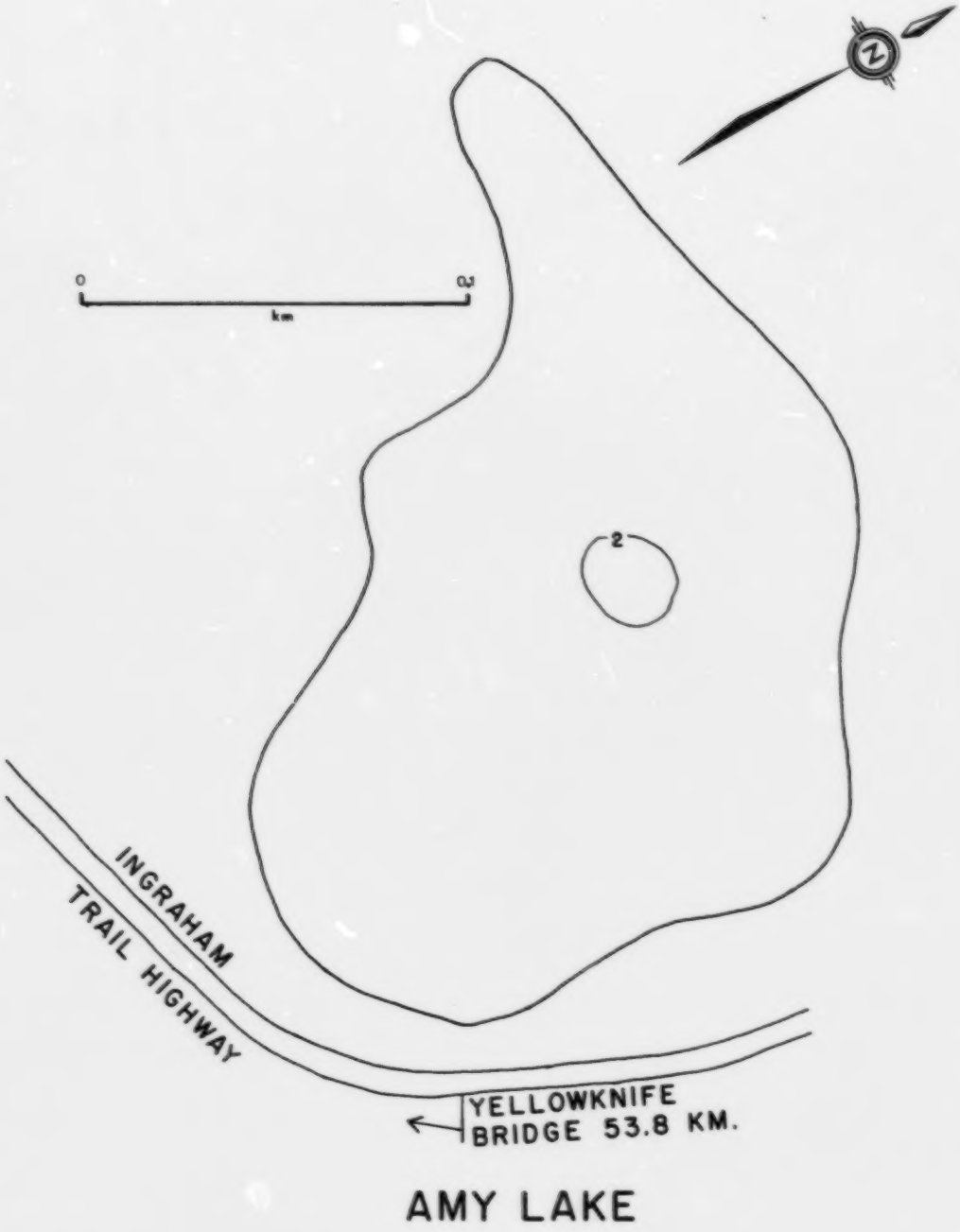
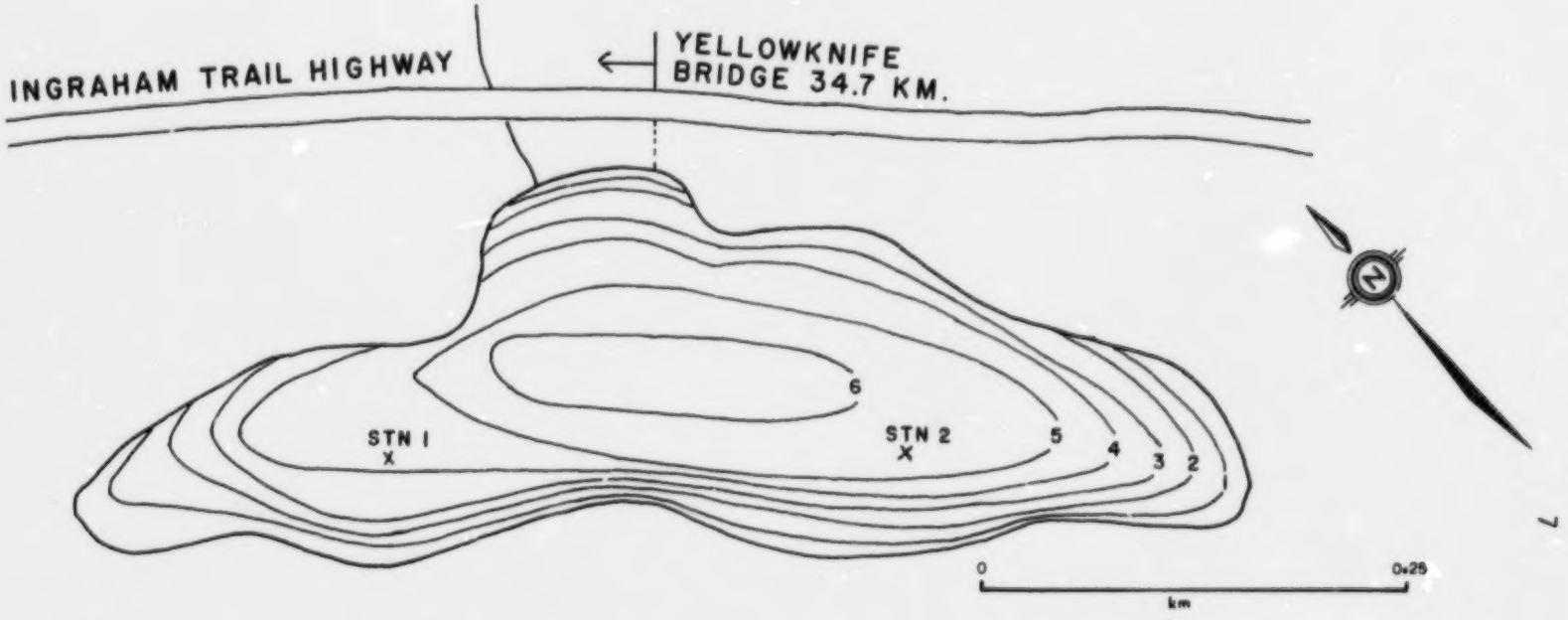


Fig. 3. Bathymetric map of Amy Lake.



ANNEMIEKE LAKE

Fig. 4. Bathymetric map of Annemieke Lake.

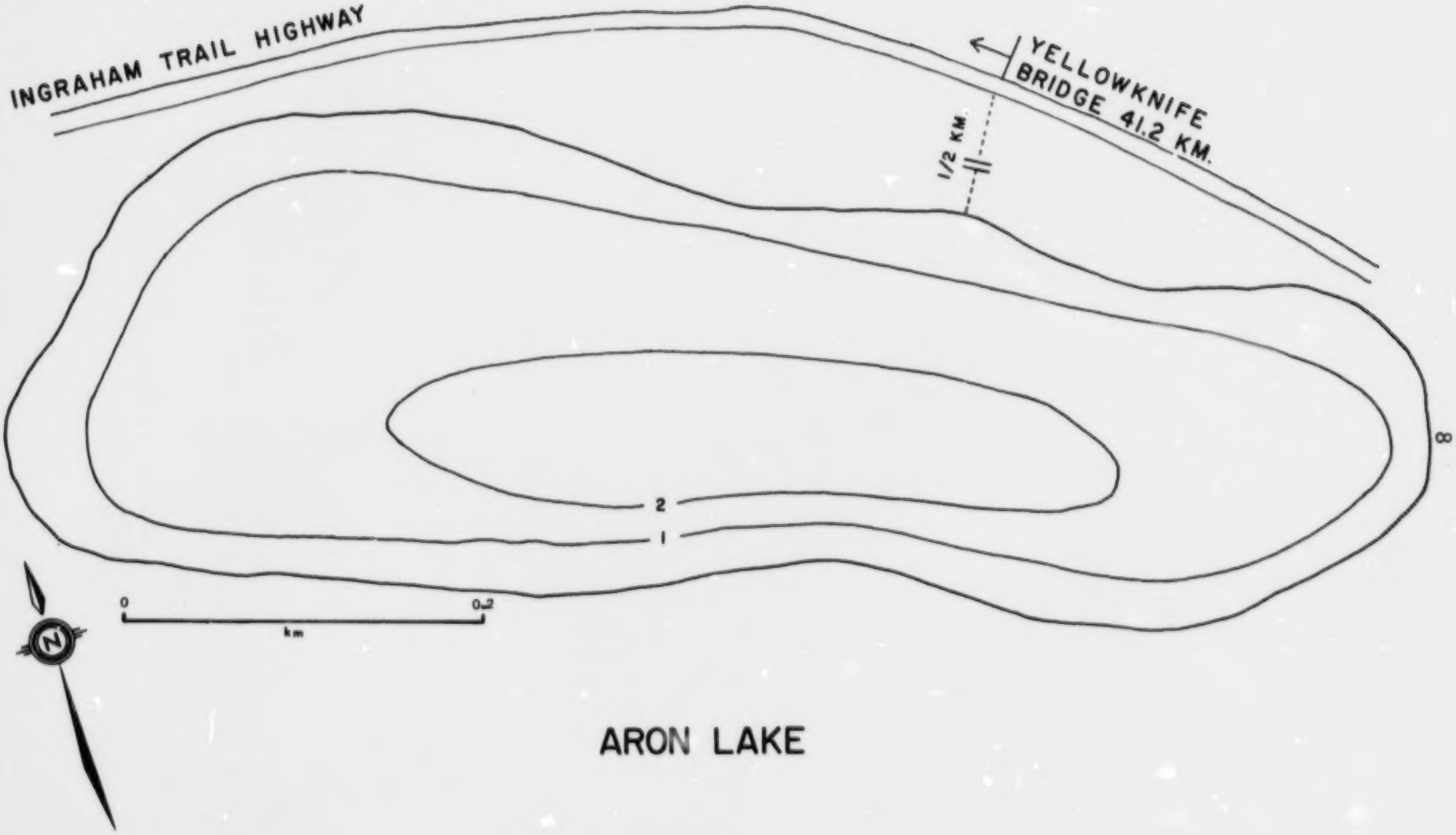


Fig. 5. Bathymetric map of Aron Lake.

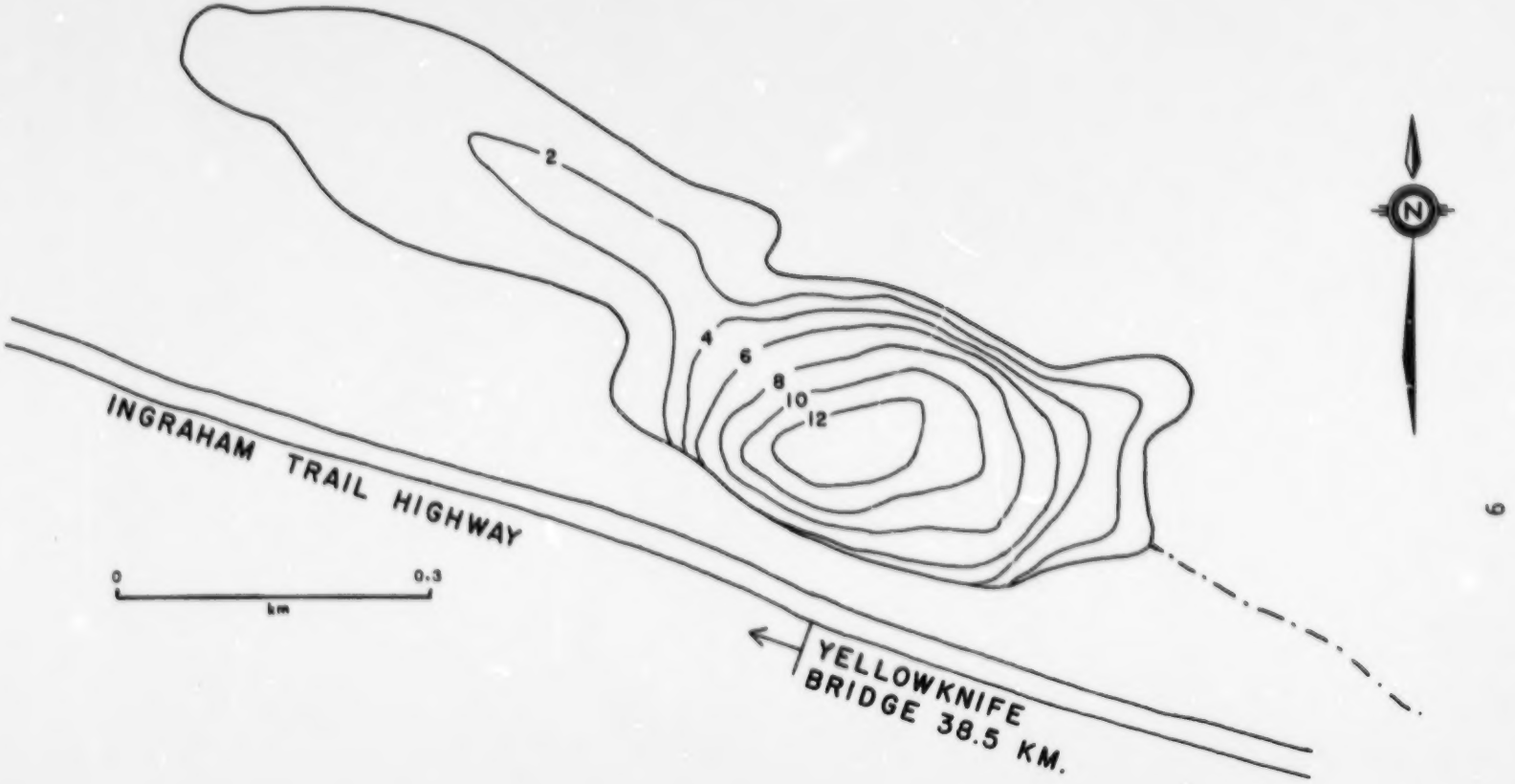
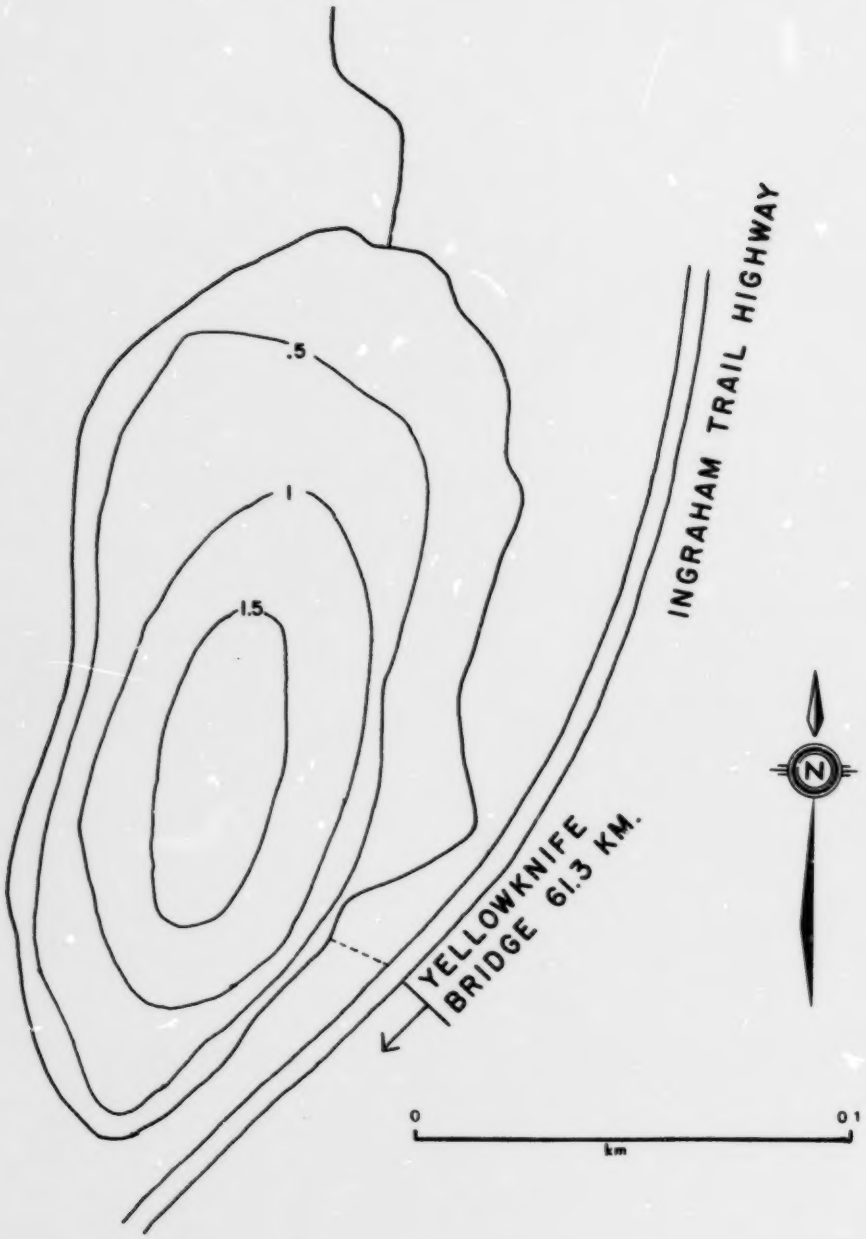


Fig. 6. Bathymetric map of Barbara Lake.



BEAVER LAKE

Fig. 7. Bathymetric map of Beaver Lake.

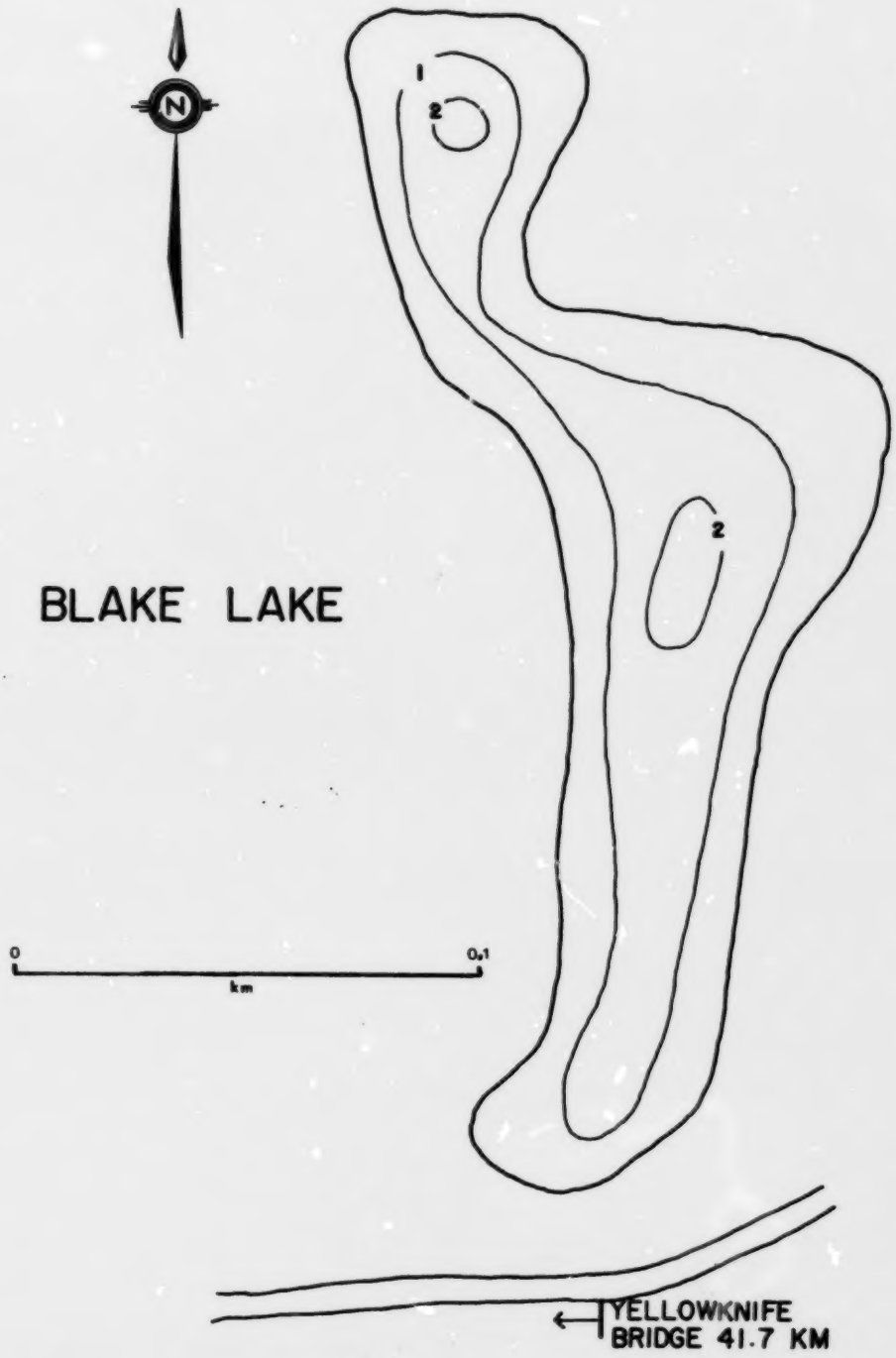


Fig. 8. Bathymetric map of Blake Lake.

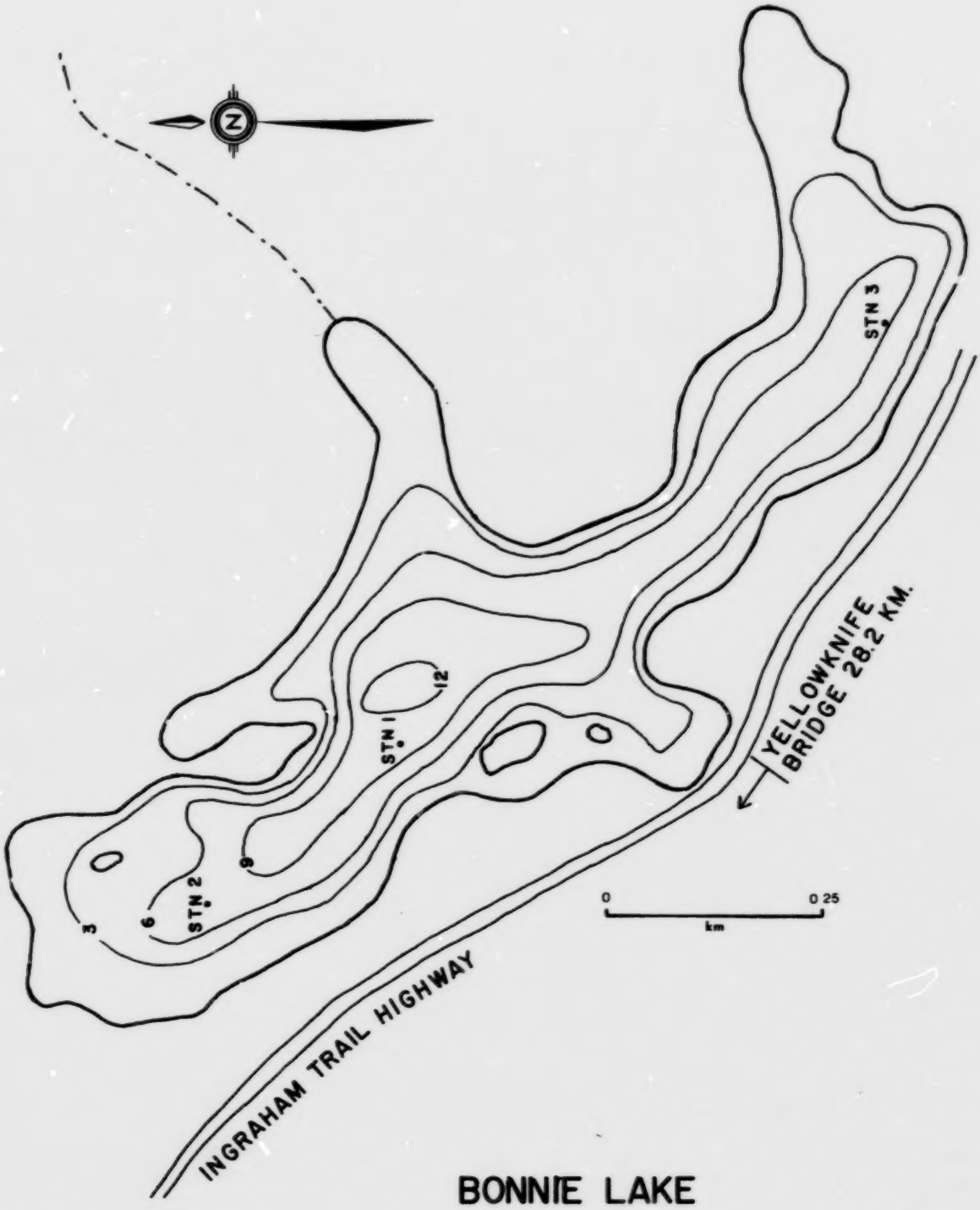
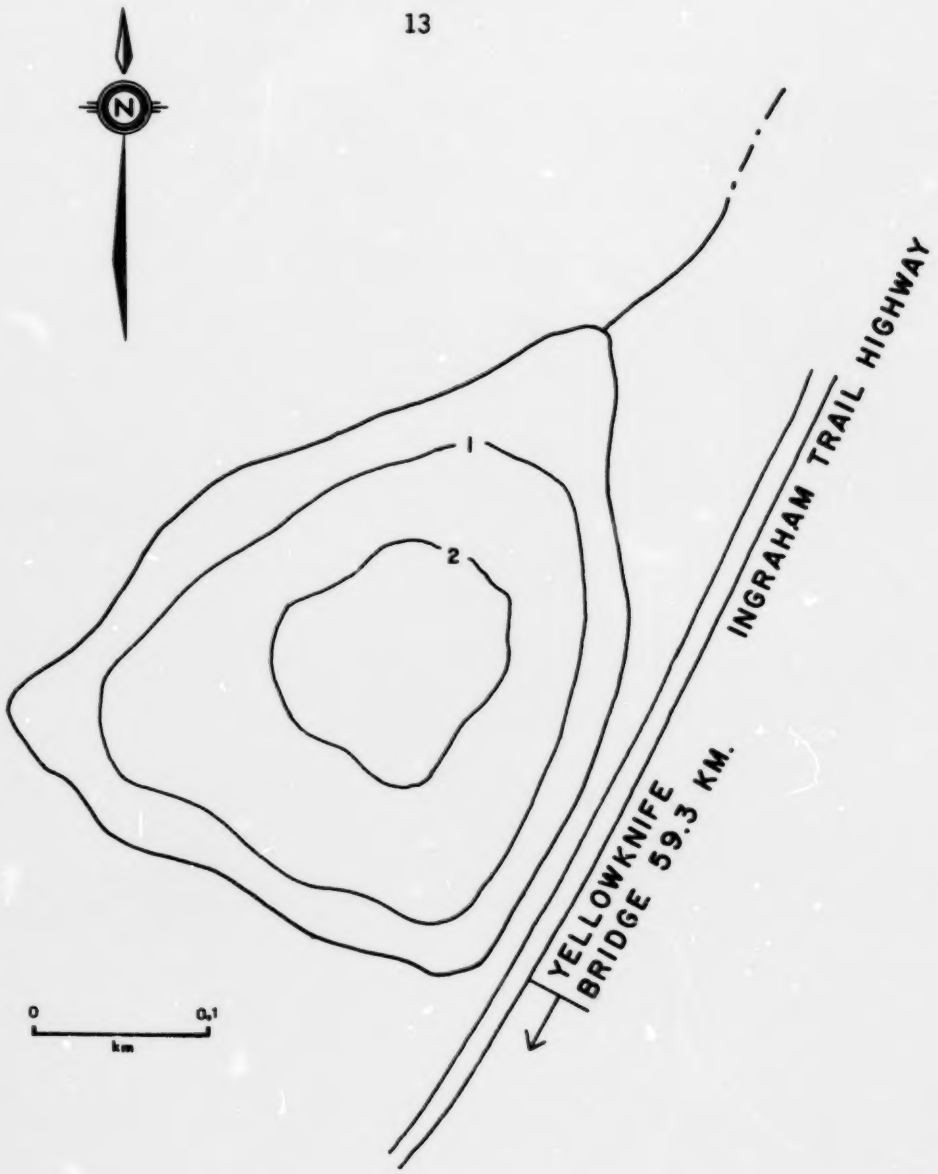
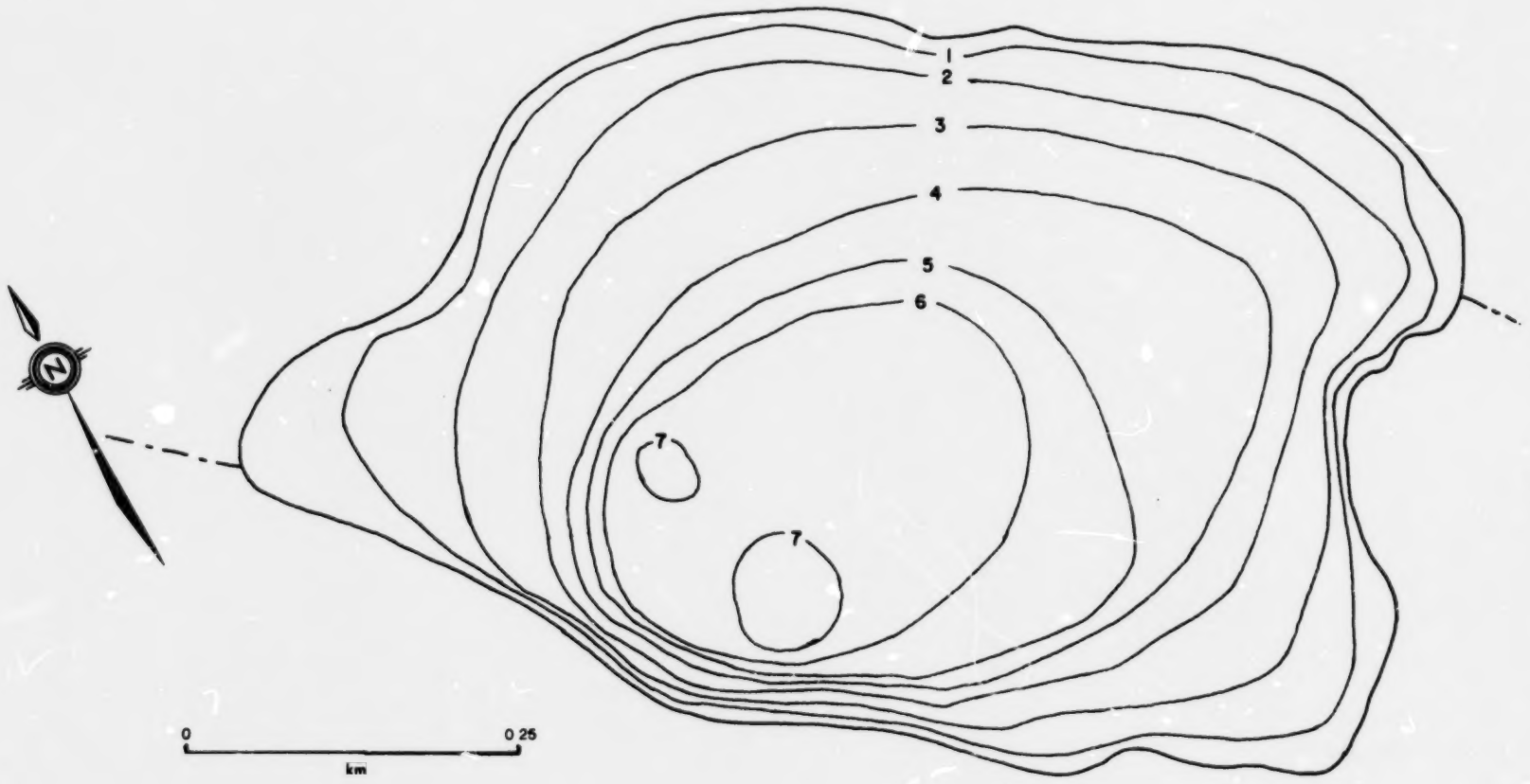


Fig. 9. Bathymetric map of Bonnie Lake.



BOSS LAKE

Fig. 10. Bathymetric map of Boss Lake.



BRENT LAKE

Fig. 11. Bathymetric map of Brent Lake.

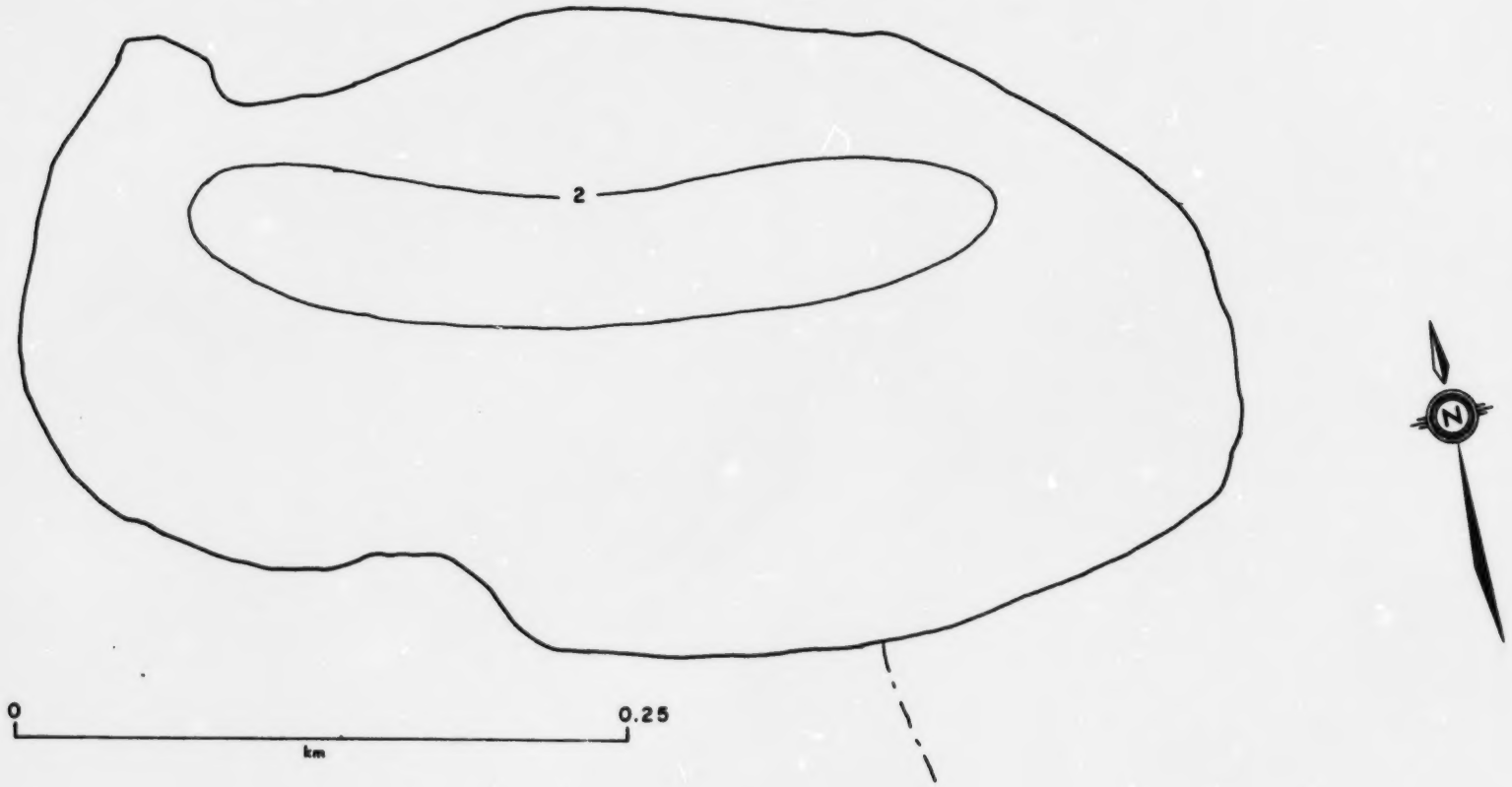
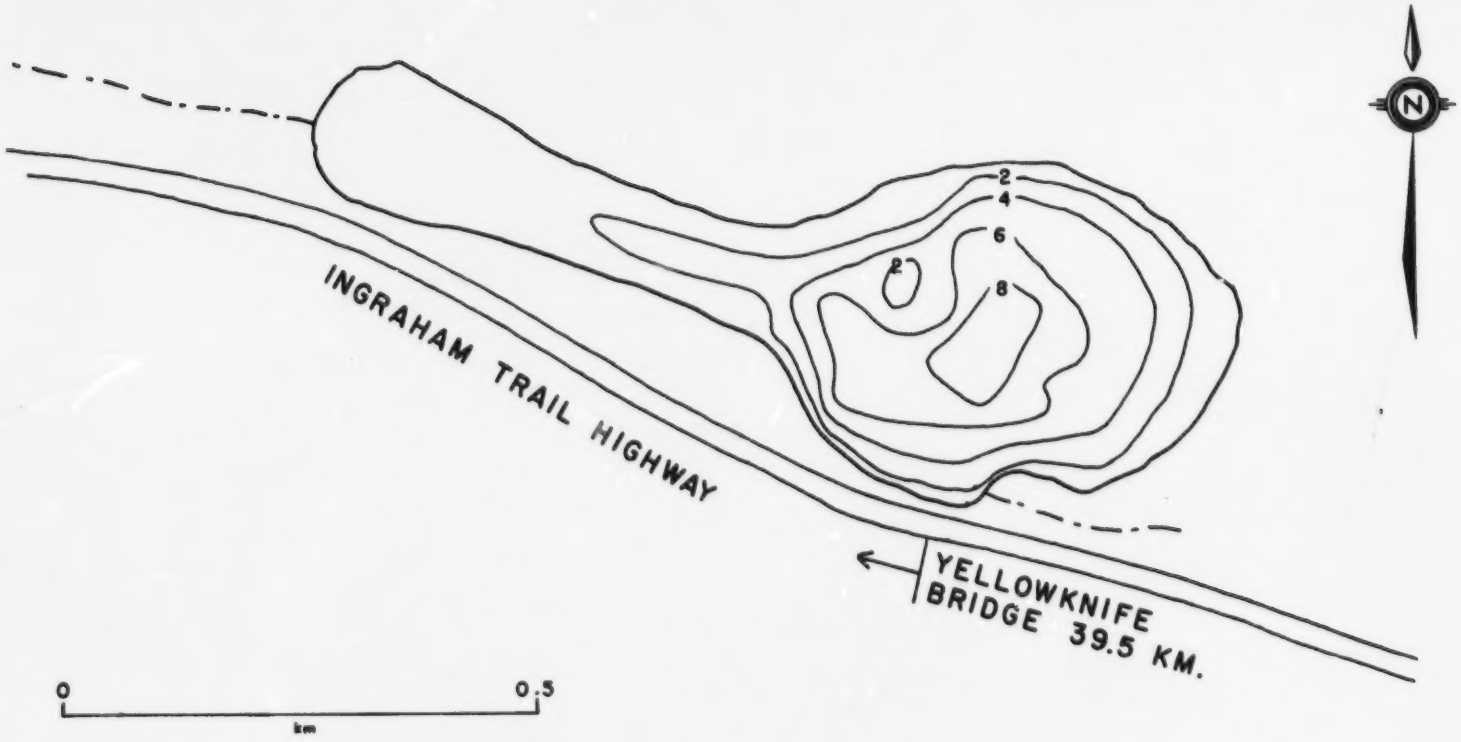
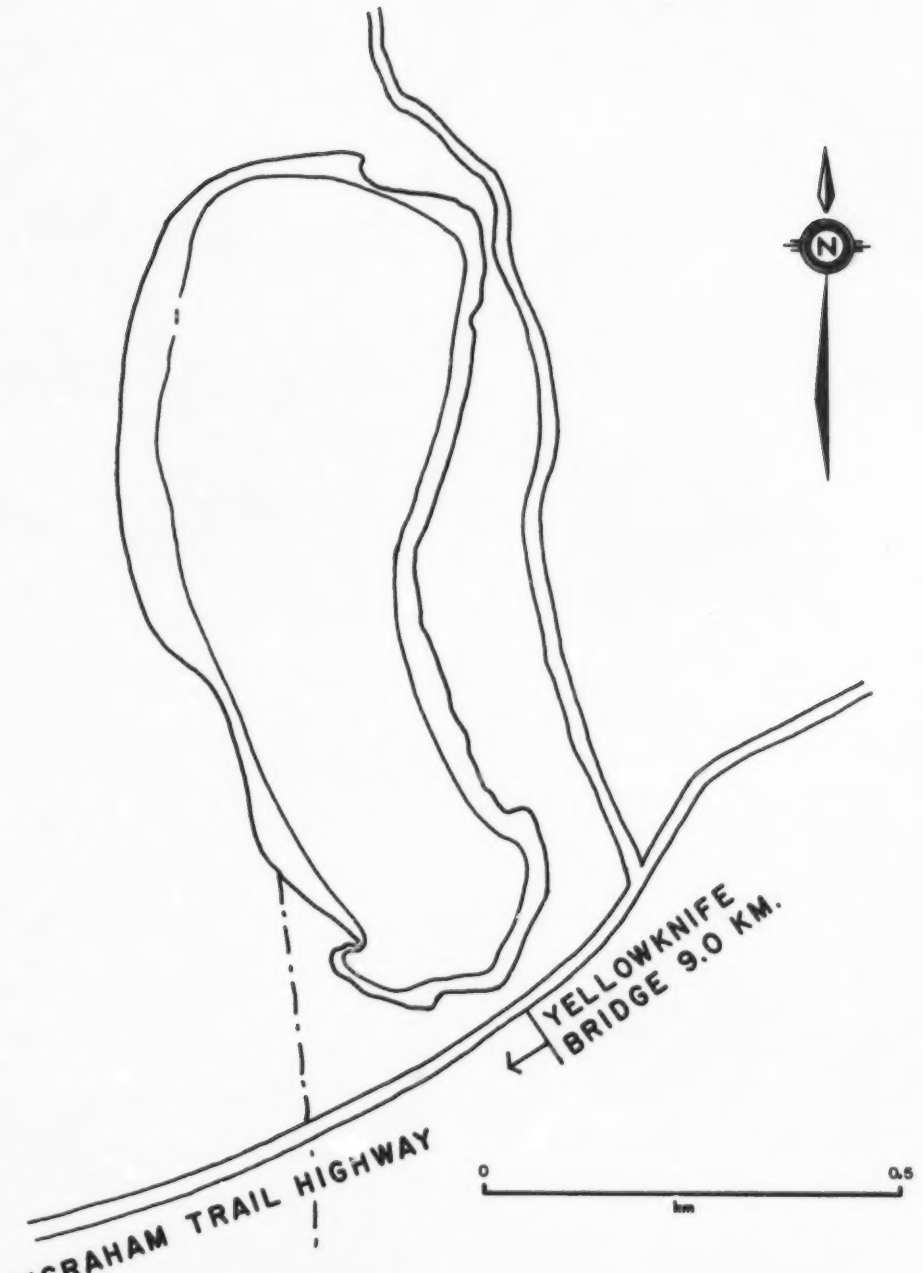


Fig. 12. Bathymetric map of Ceejay Lake.



DAVIDSON LAKE

Fig. 13. Bathymetric map of Davidson Lake.



FALK LAKE

Fig. 14. Bathymetric map of Falk Lake.

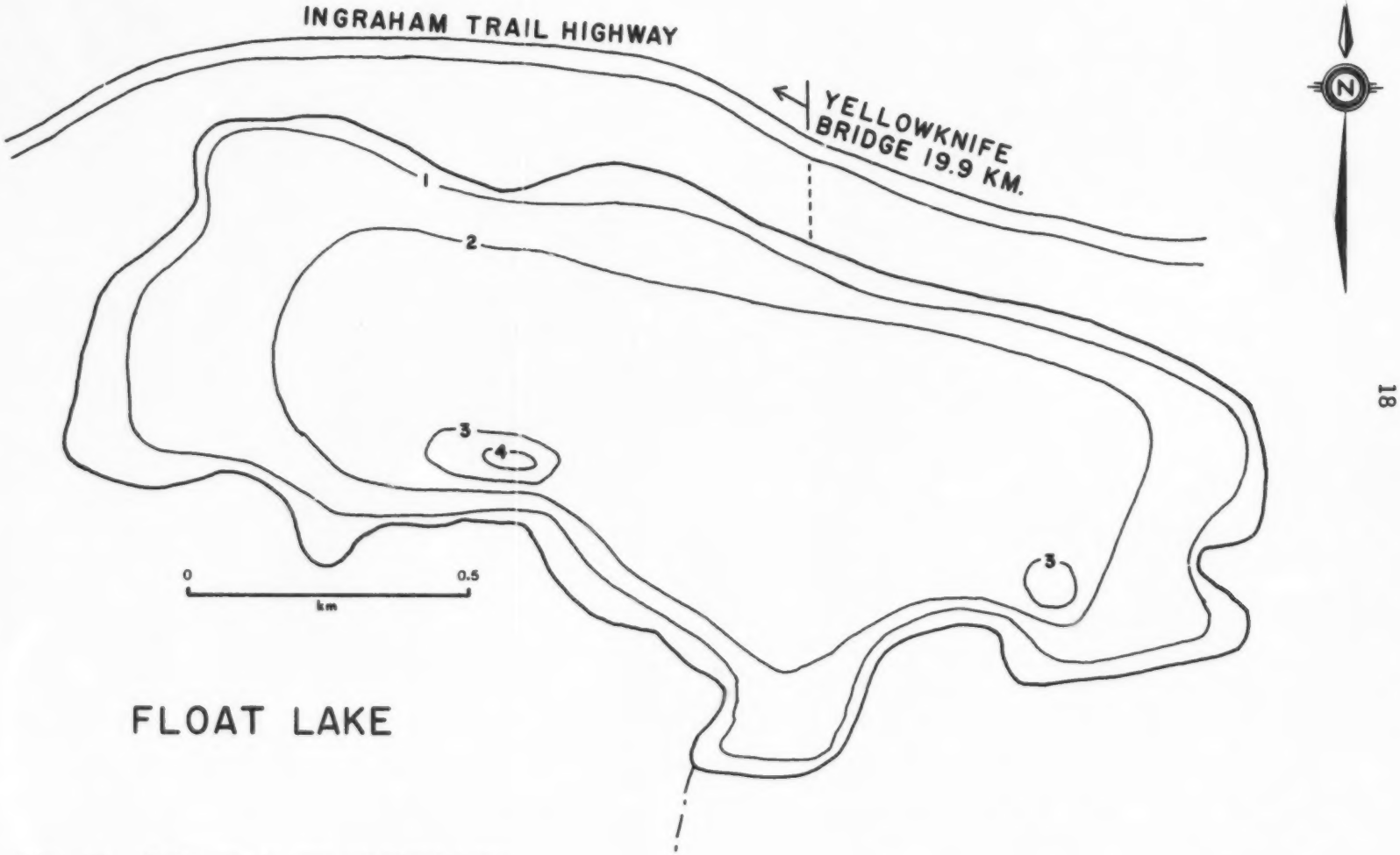


Fig. 15. Bathymetric map of Float Lake.

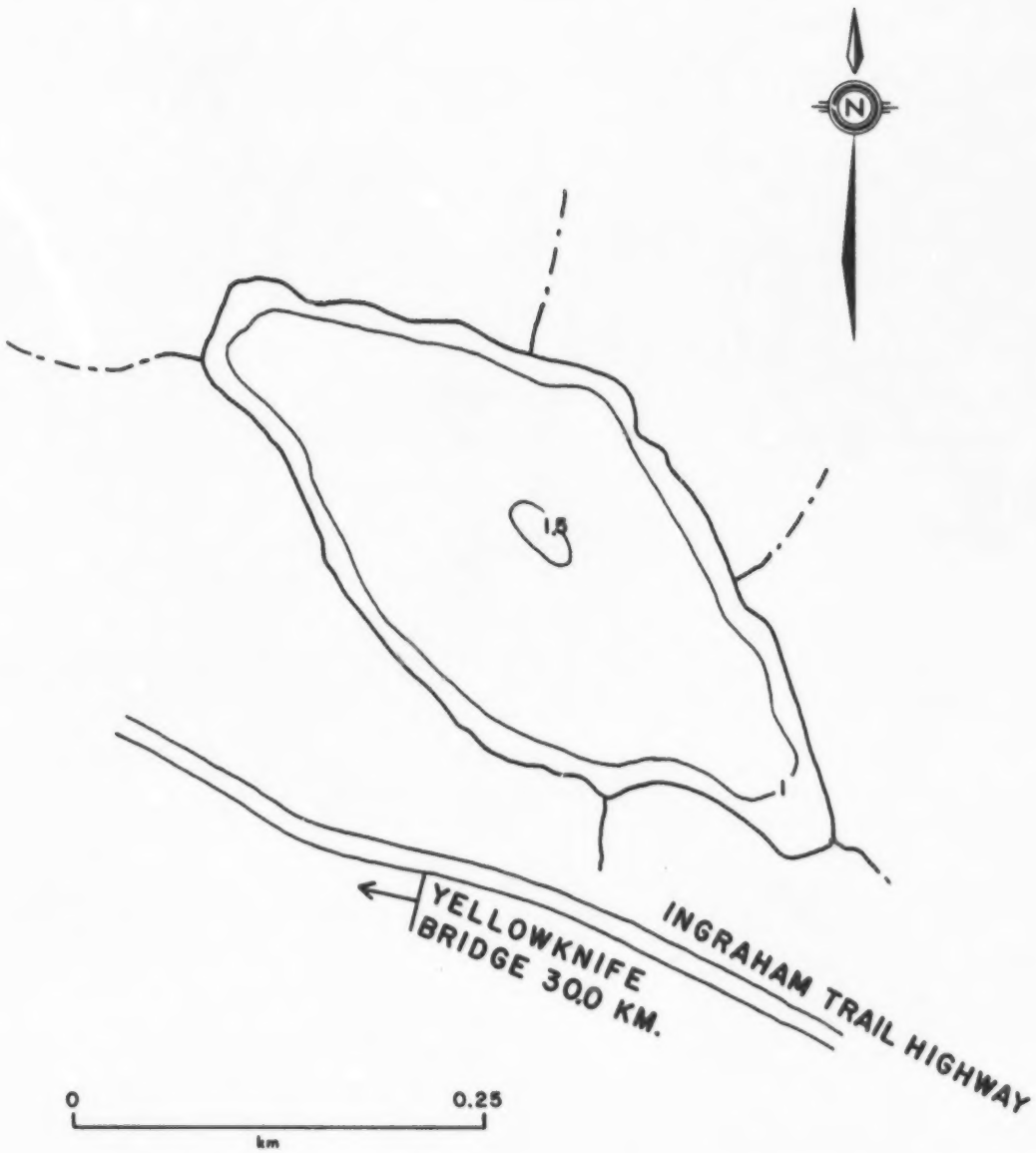


Fig. 16. Bathymetric map of Greater Scaup Lake.

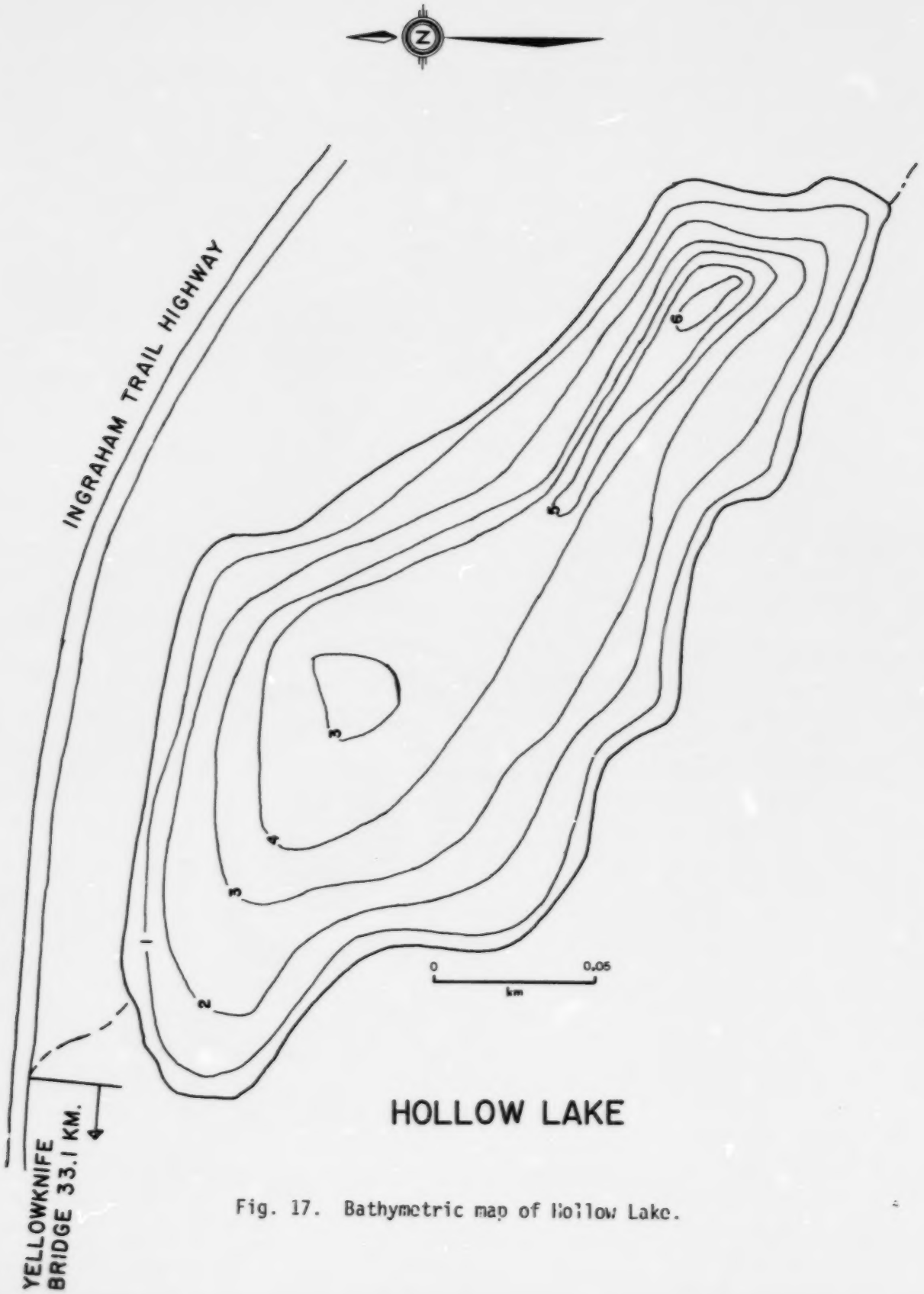


Fig. 17. Bathymetric map of Hollow Lake.

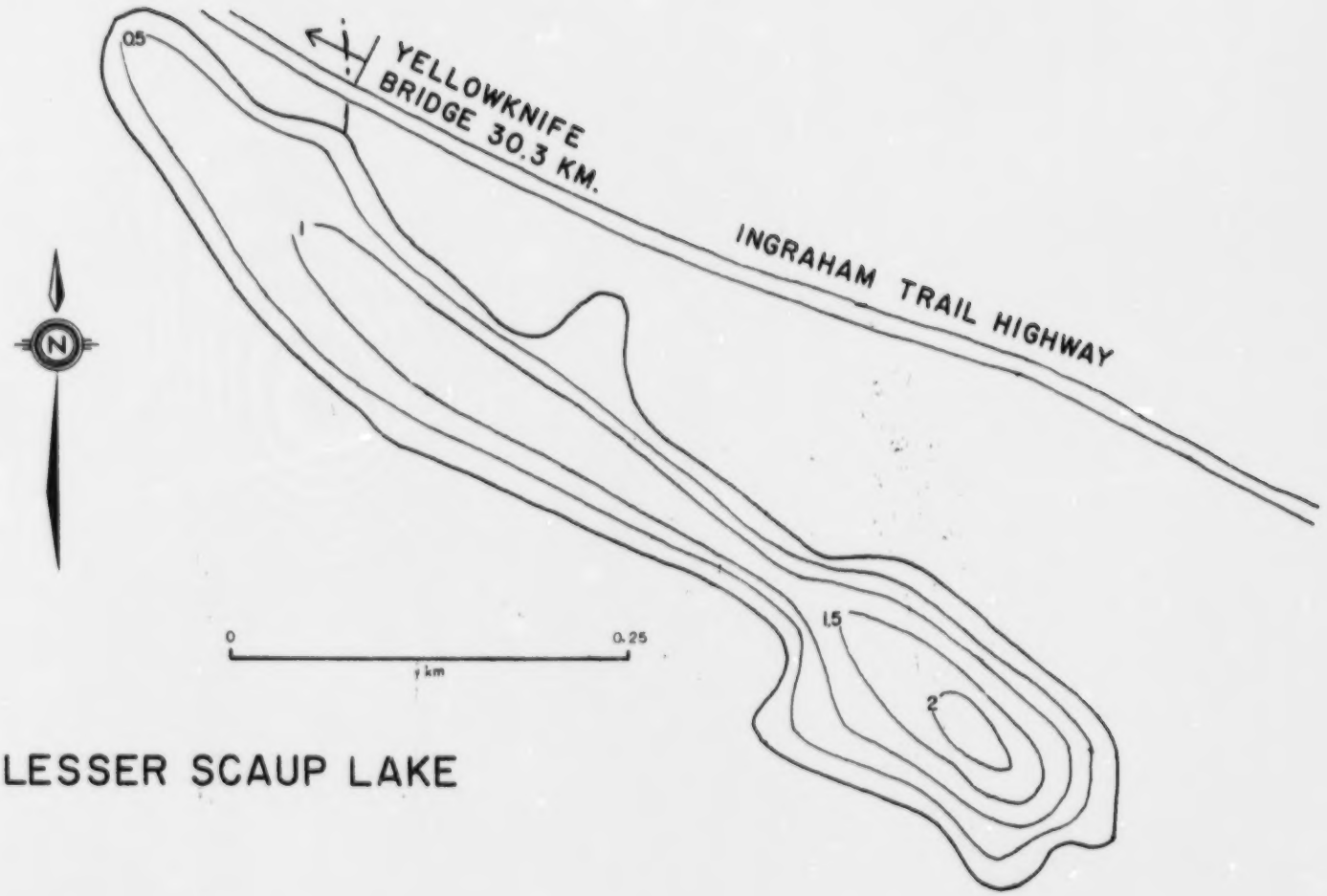


Fig. 18. Bathymetric map of Lesser Scaup Lake.

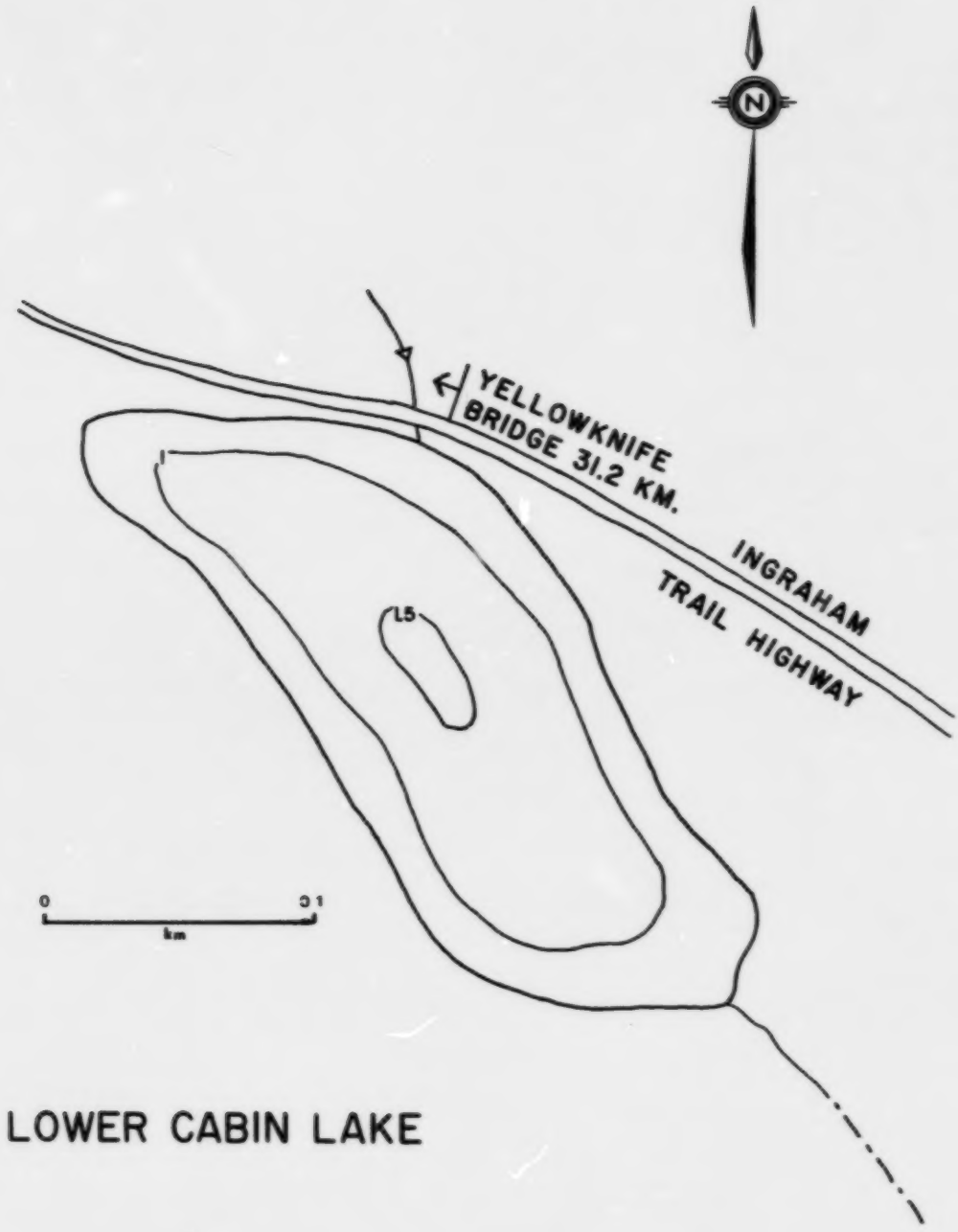


Fig. 19. Bathymetric map of Lower Cabin Lake.

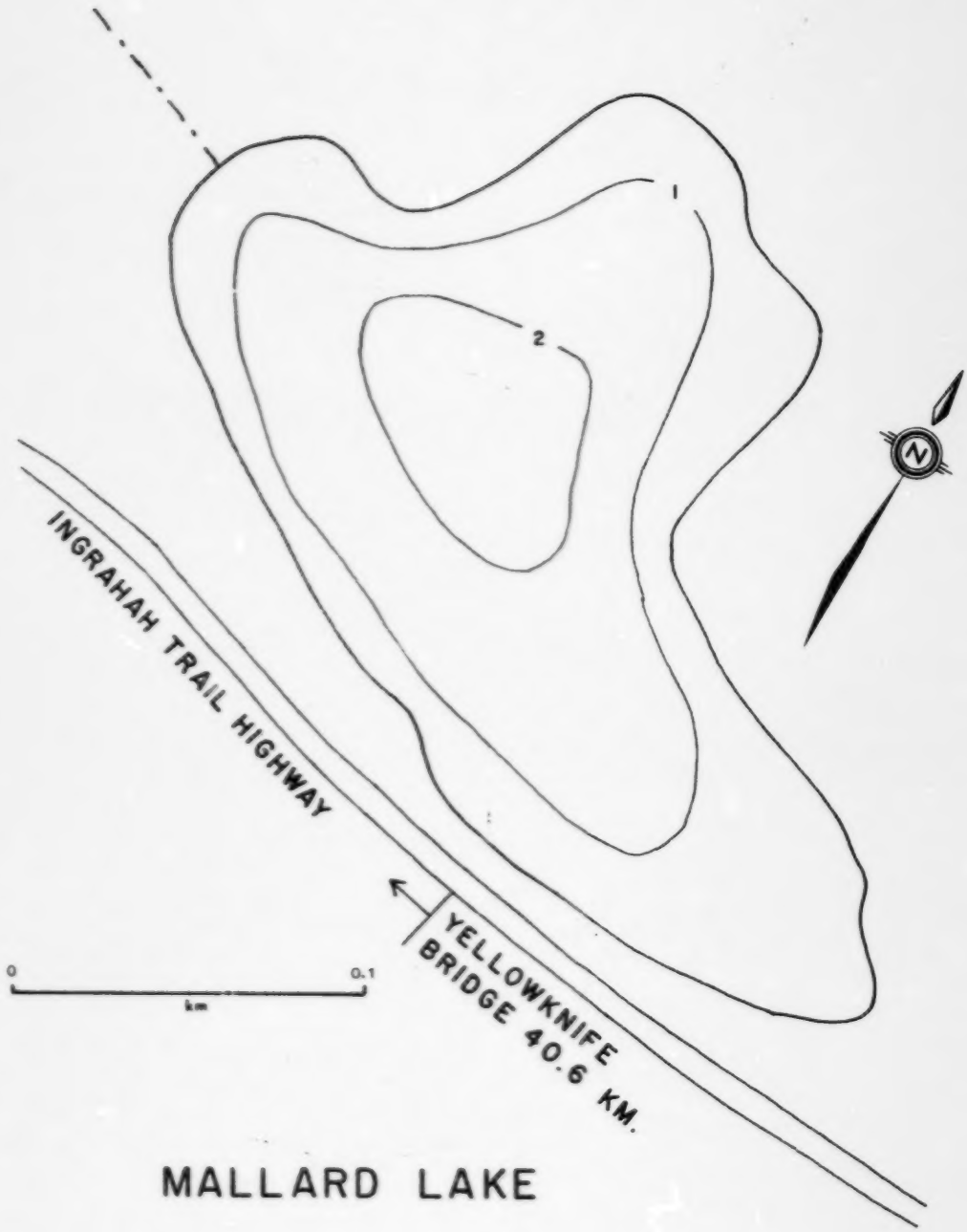


Fig. 20. Bathymetric map of Mallard Lake.

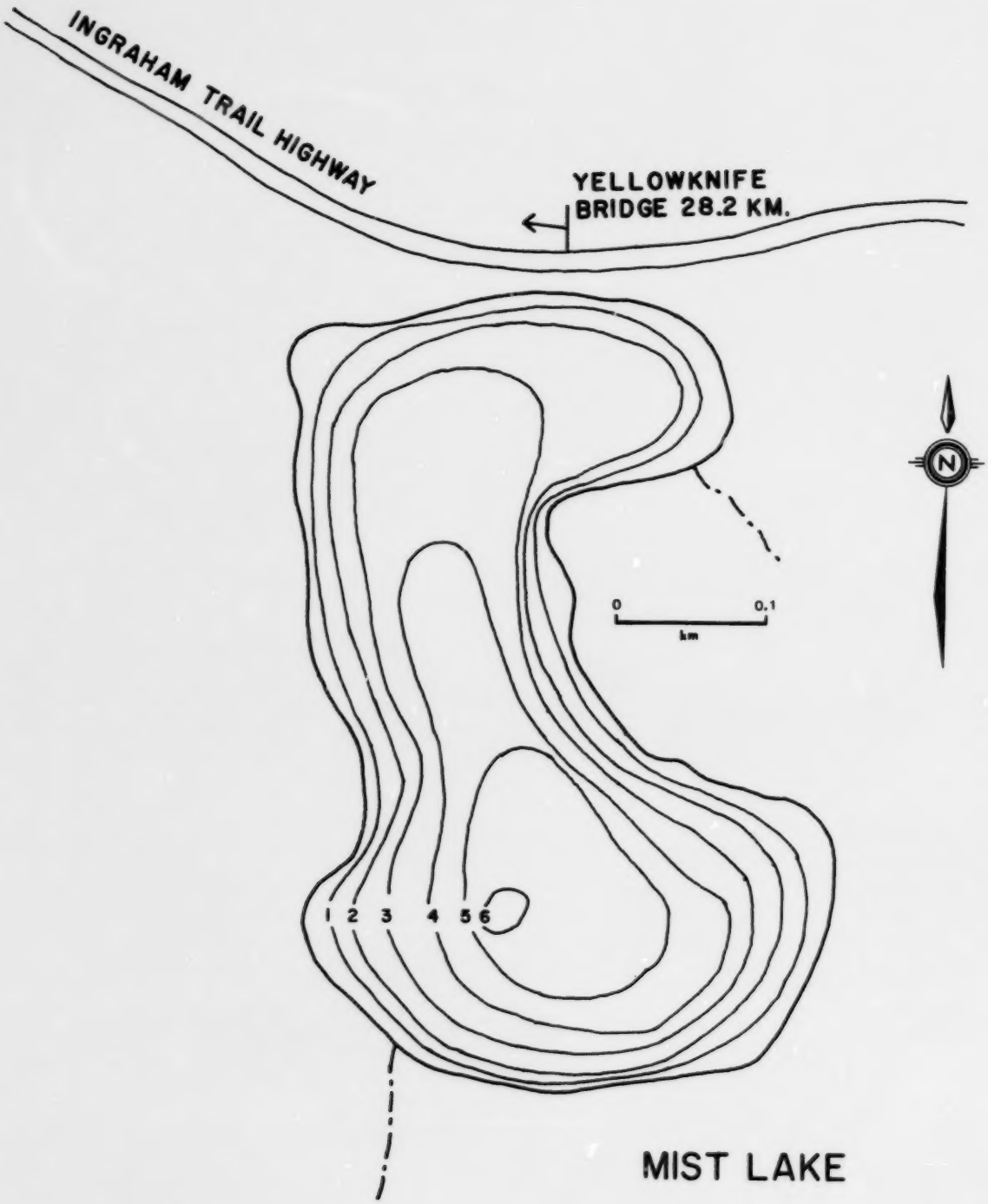


Fig. 21. Bathymetric map of Mist Lake.

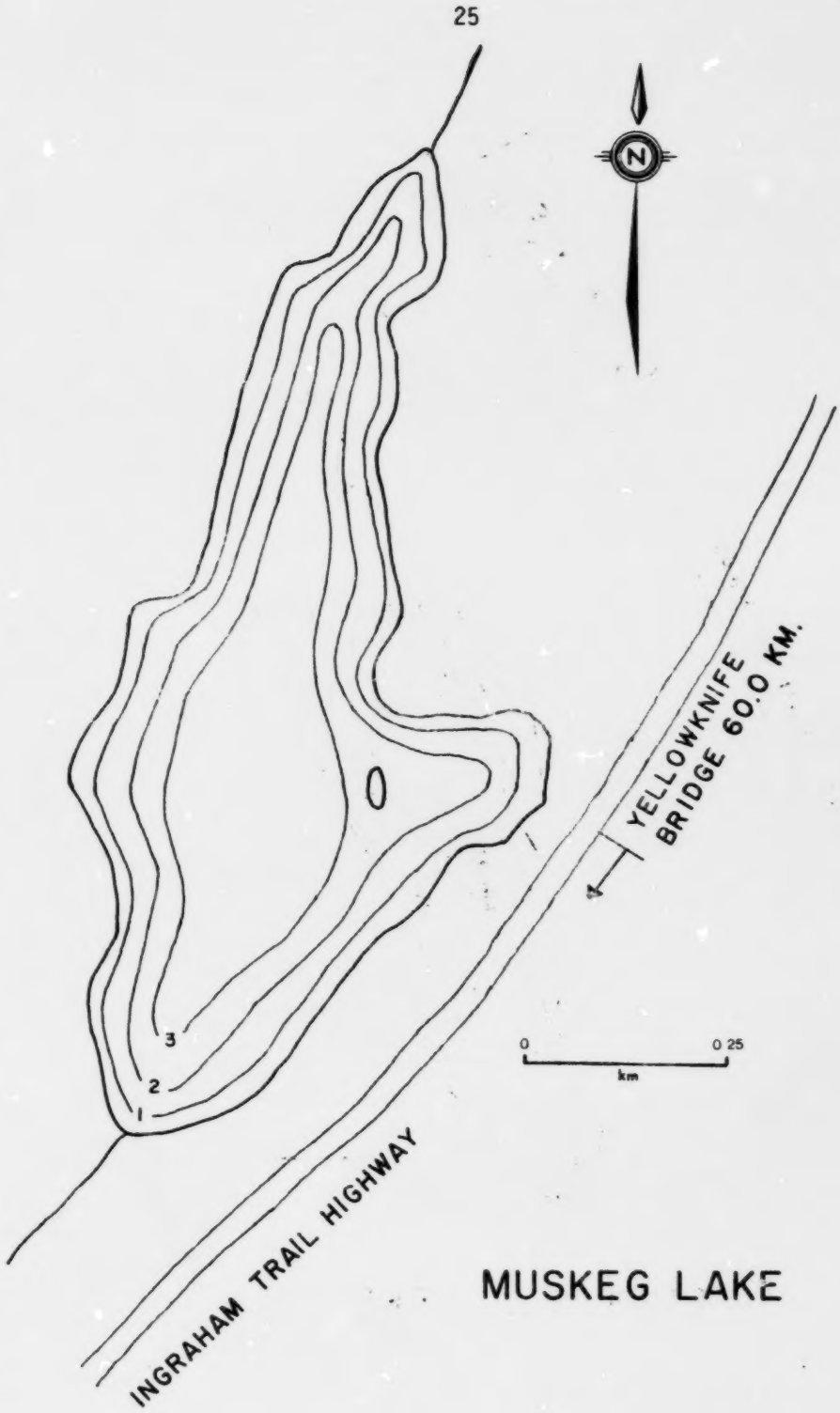
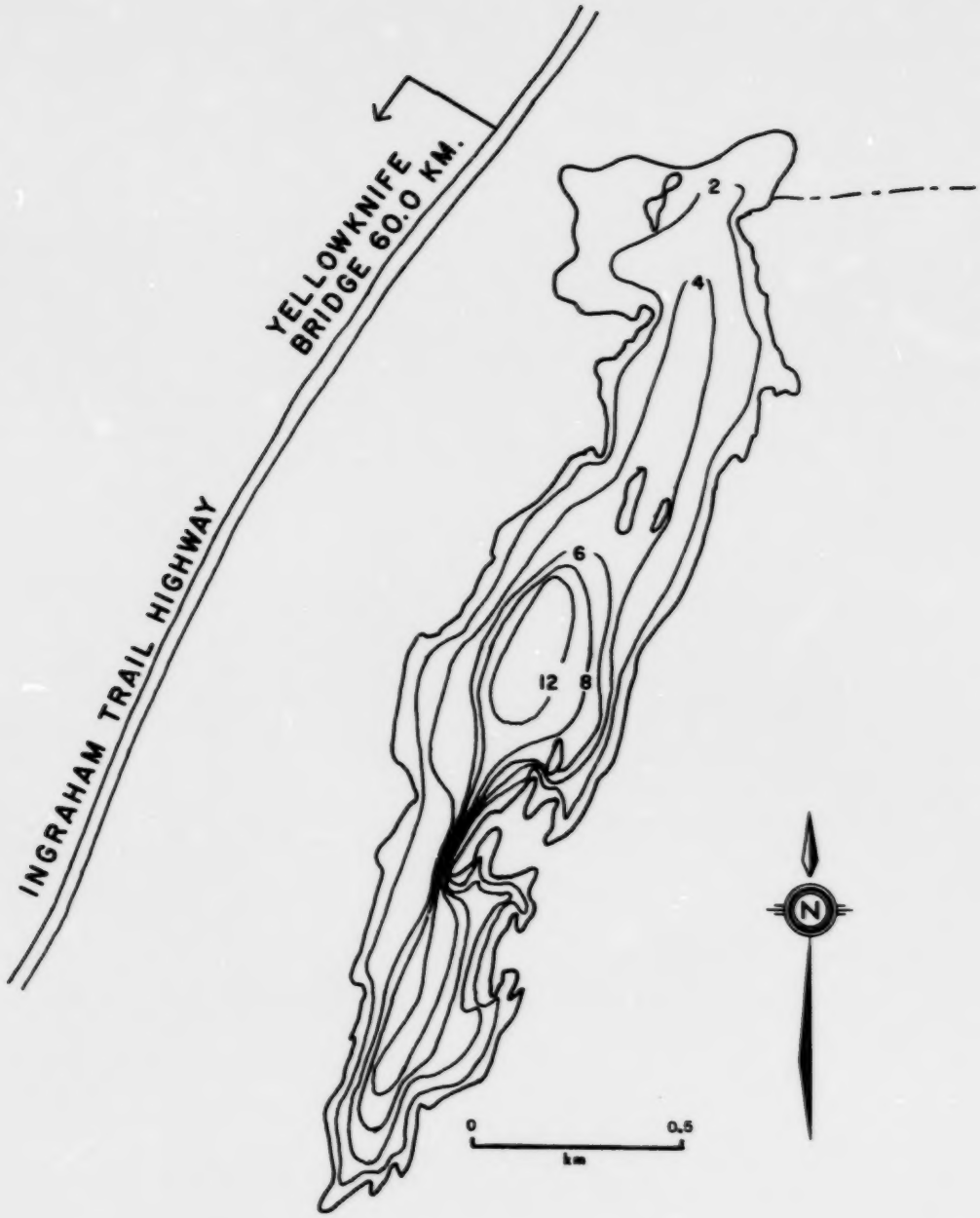


Fig. 22. Bathymetric map of Muskeg Lake.



PENINSULA LAKE

Fig. 23. Bathymetric map of Peninsula Lake.

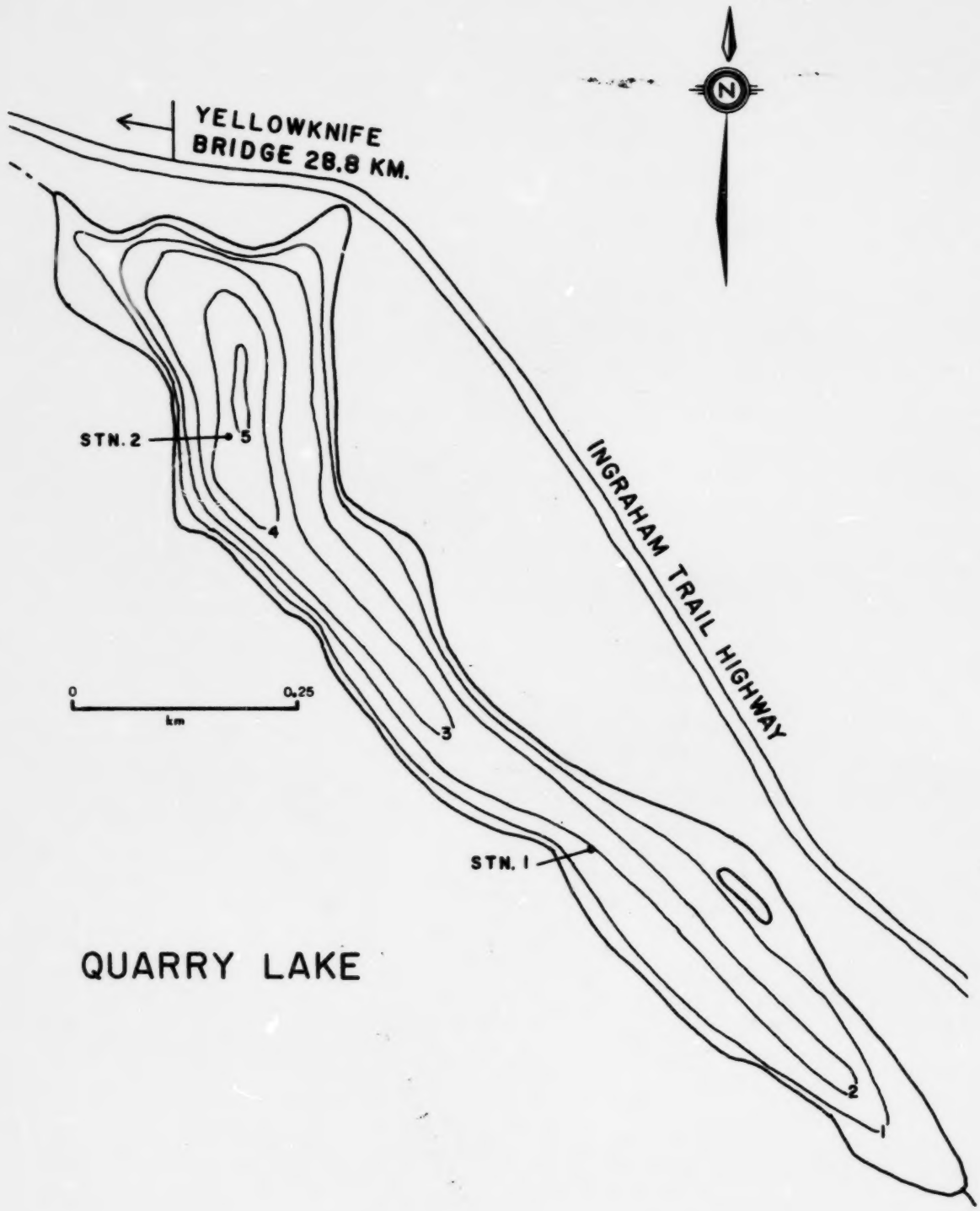


Fig. 24. Bathymetric map of Quarry Lake.

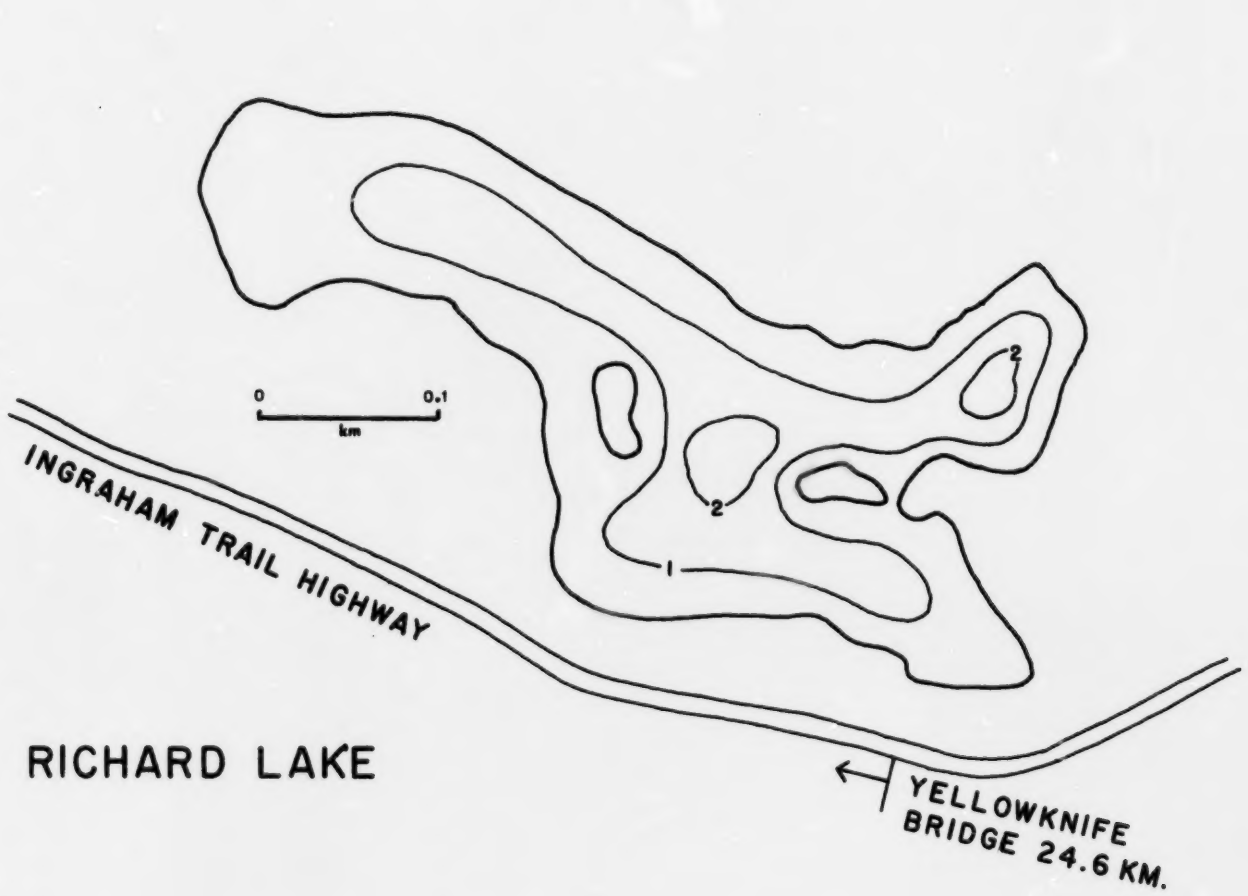


Fig. 25. Bathymetric map of Richard Lake.

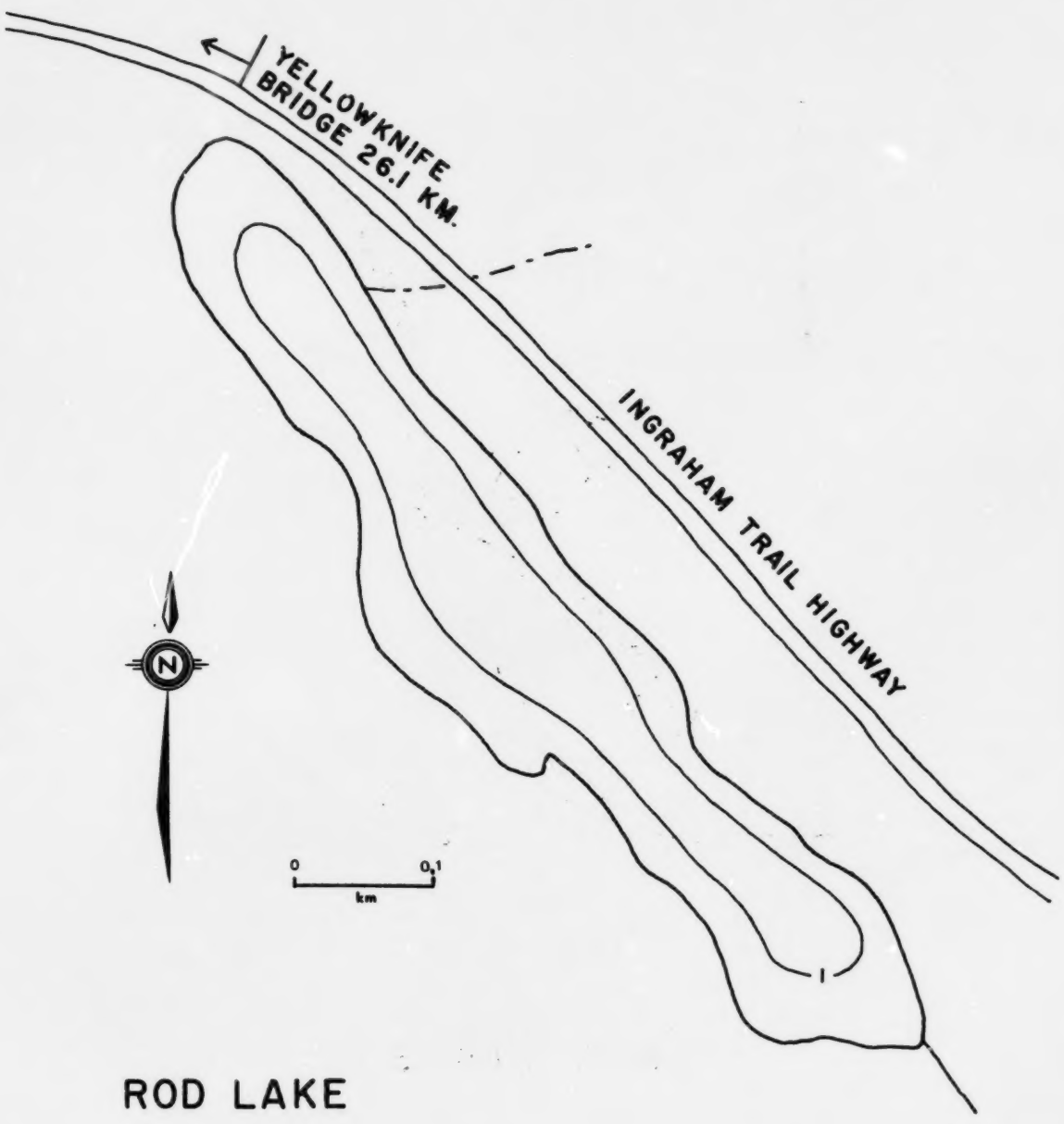
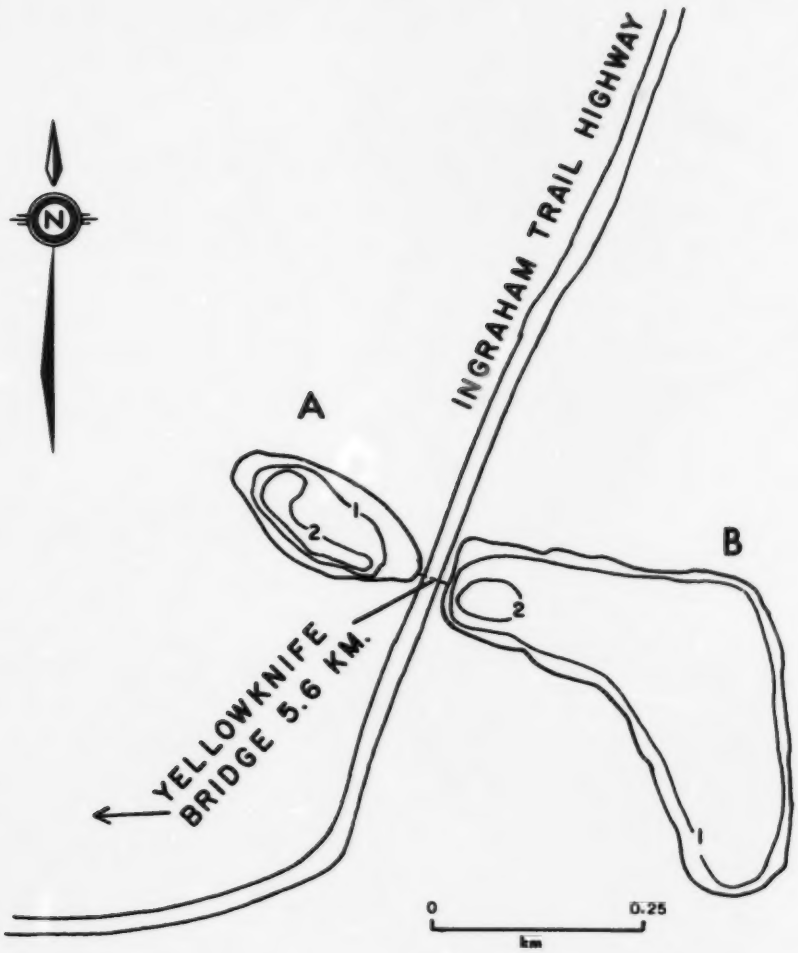


Fig. 26. Bathymetric map of Rod Lake.



SPLIT LAKES

Fig. 27. Bathymetric map of Split lakes (A and B).

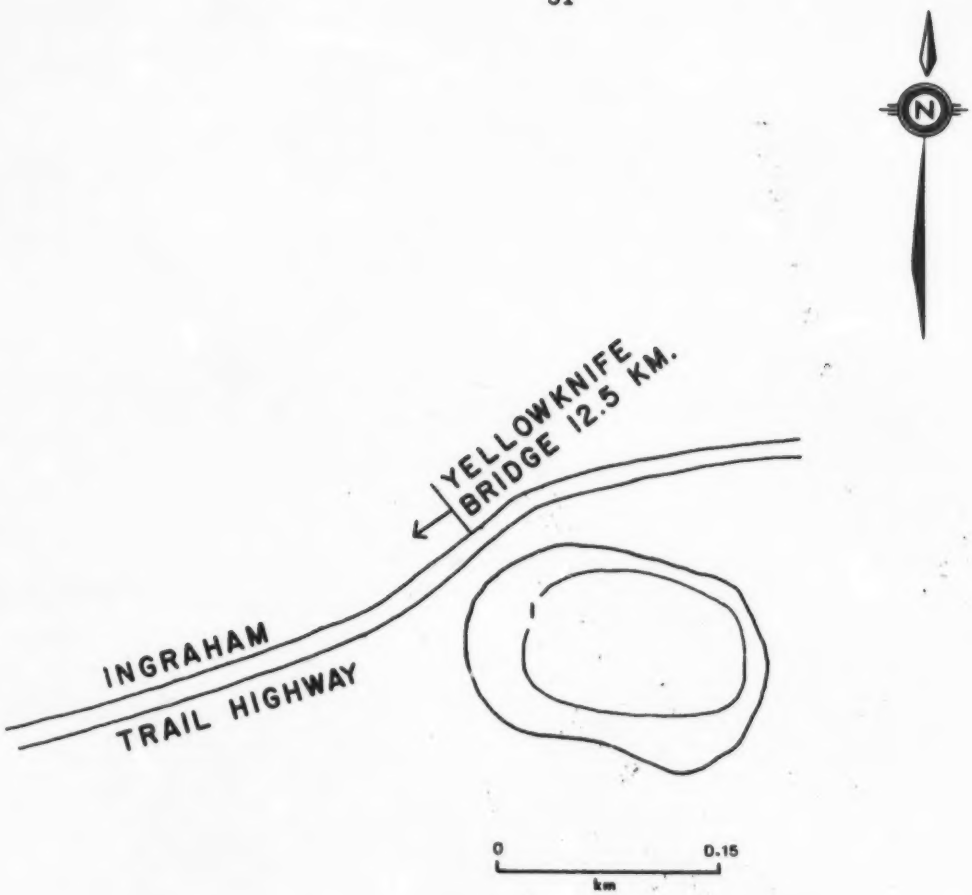
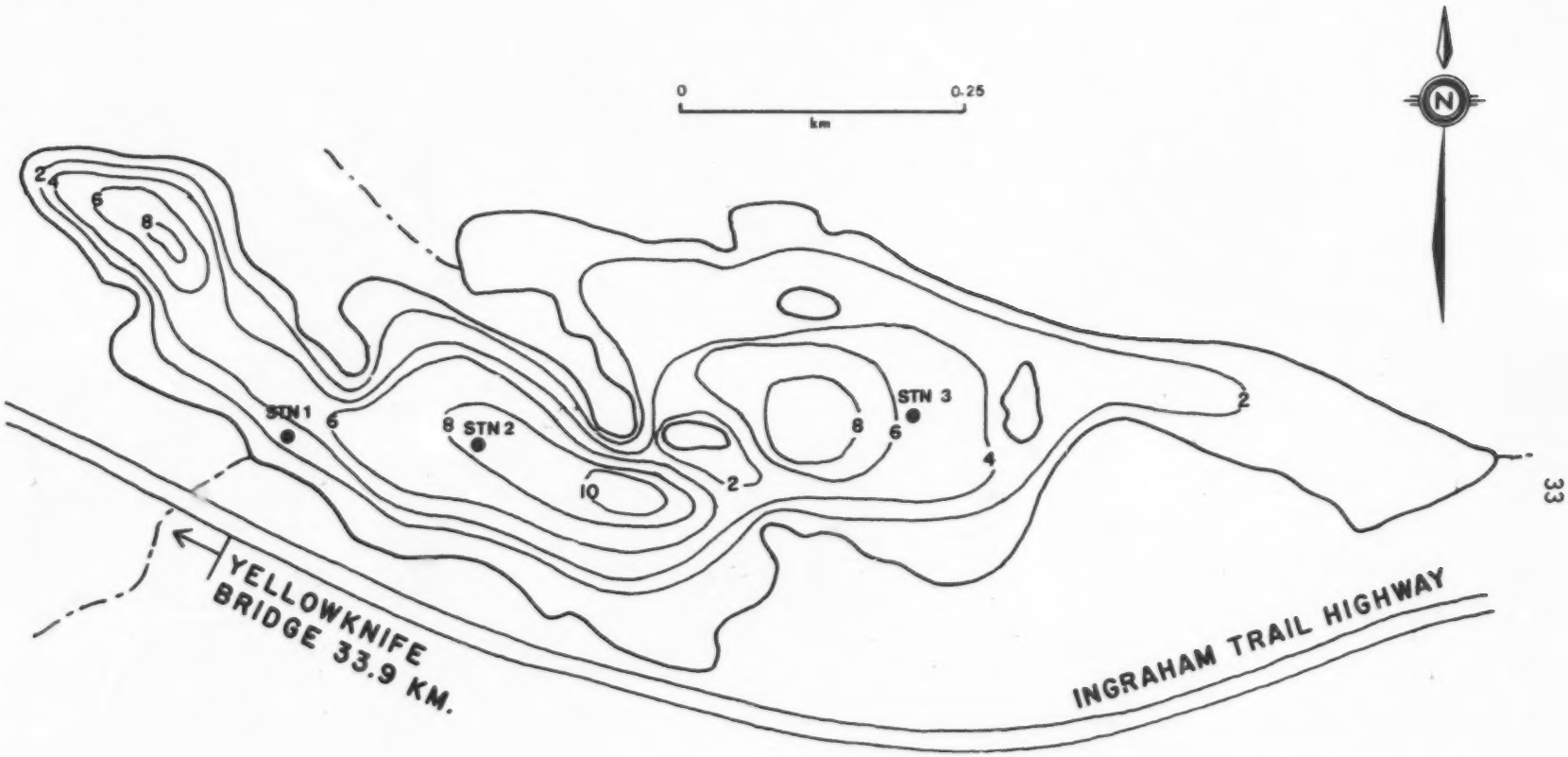


Fig. 28. Bathymetric map of Spot Lake.

Fig. 29. Bathymetric map of Stewart Lake.



STIRLING LAKE

Fig. 30. Bathymetric map of Stirling Lake.

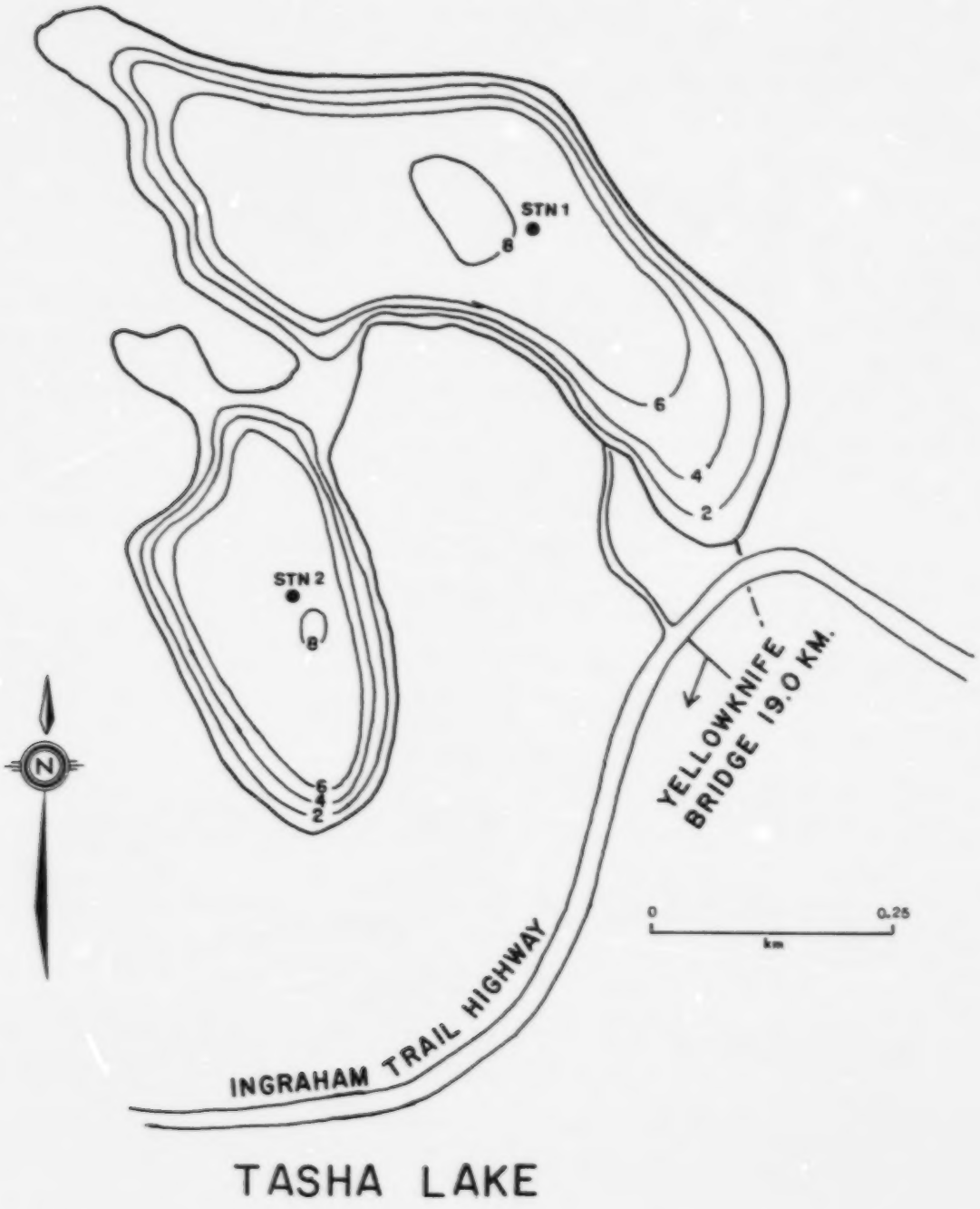
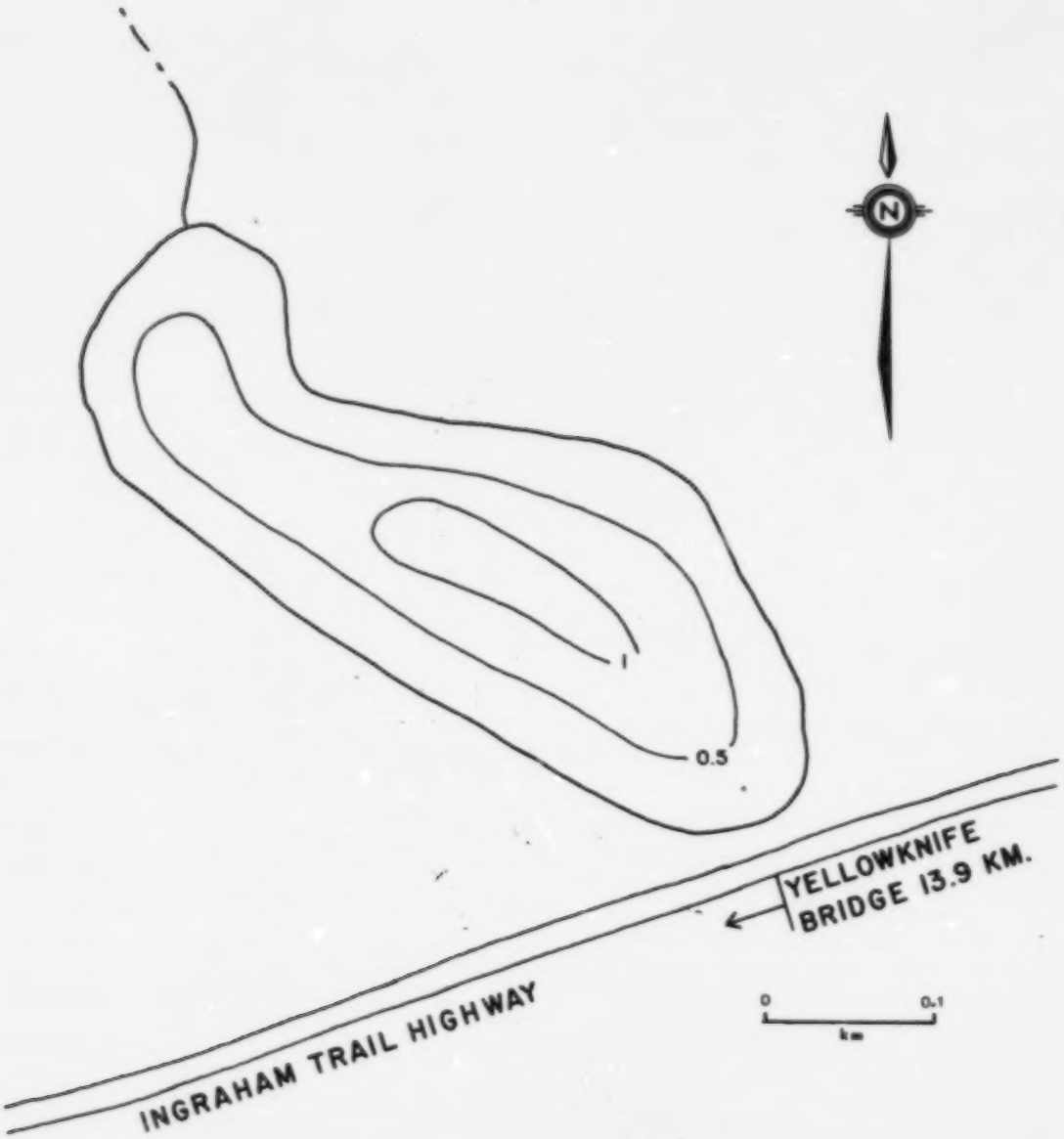


Fig. 31. Bathymetric map of Tasha Lake.



THROAT LAKE

Fig. 32. Bathymetric map of Throat Lake.

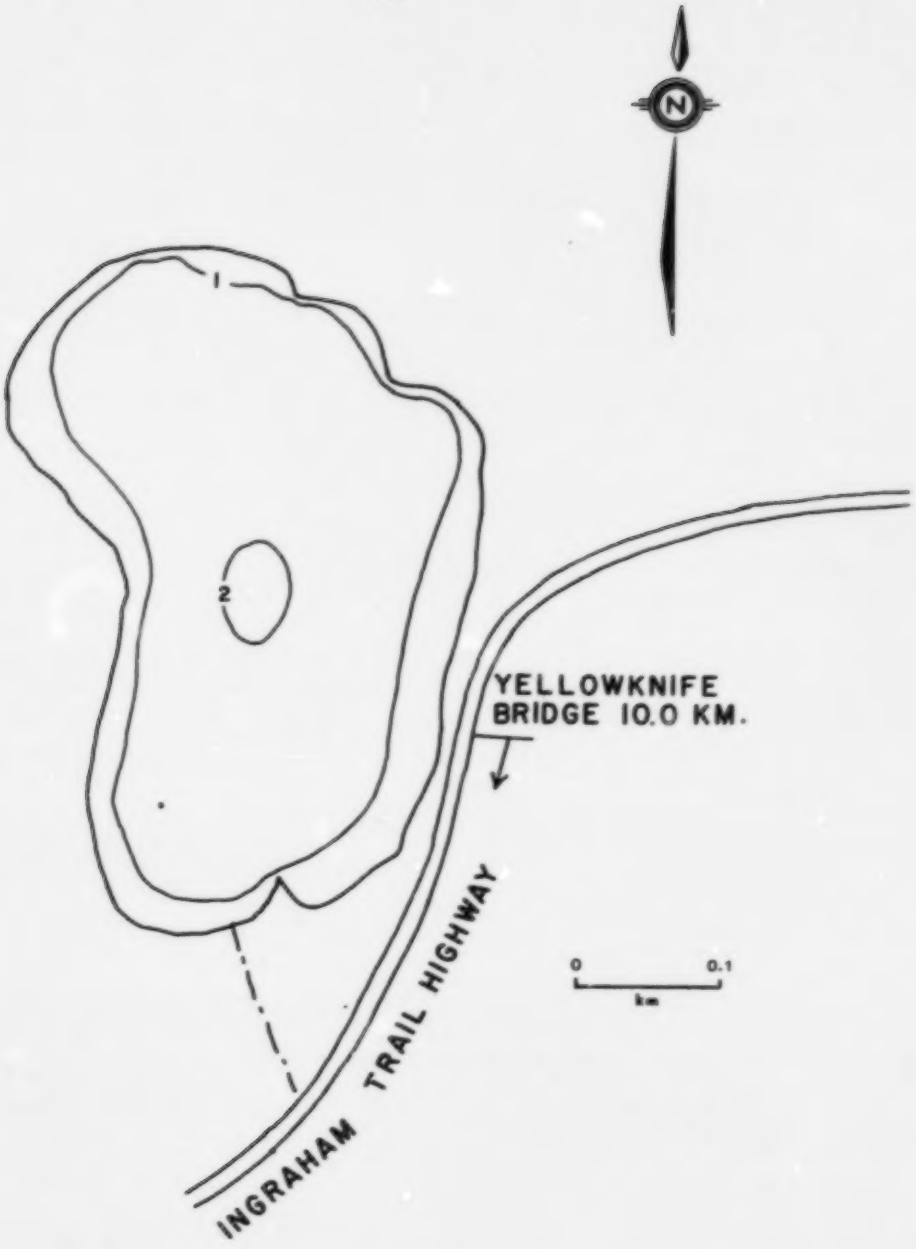


Fig. 33. Bathymetric map of Tom Lake.

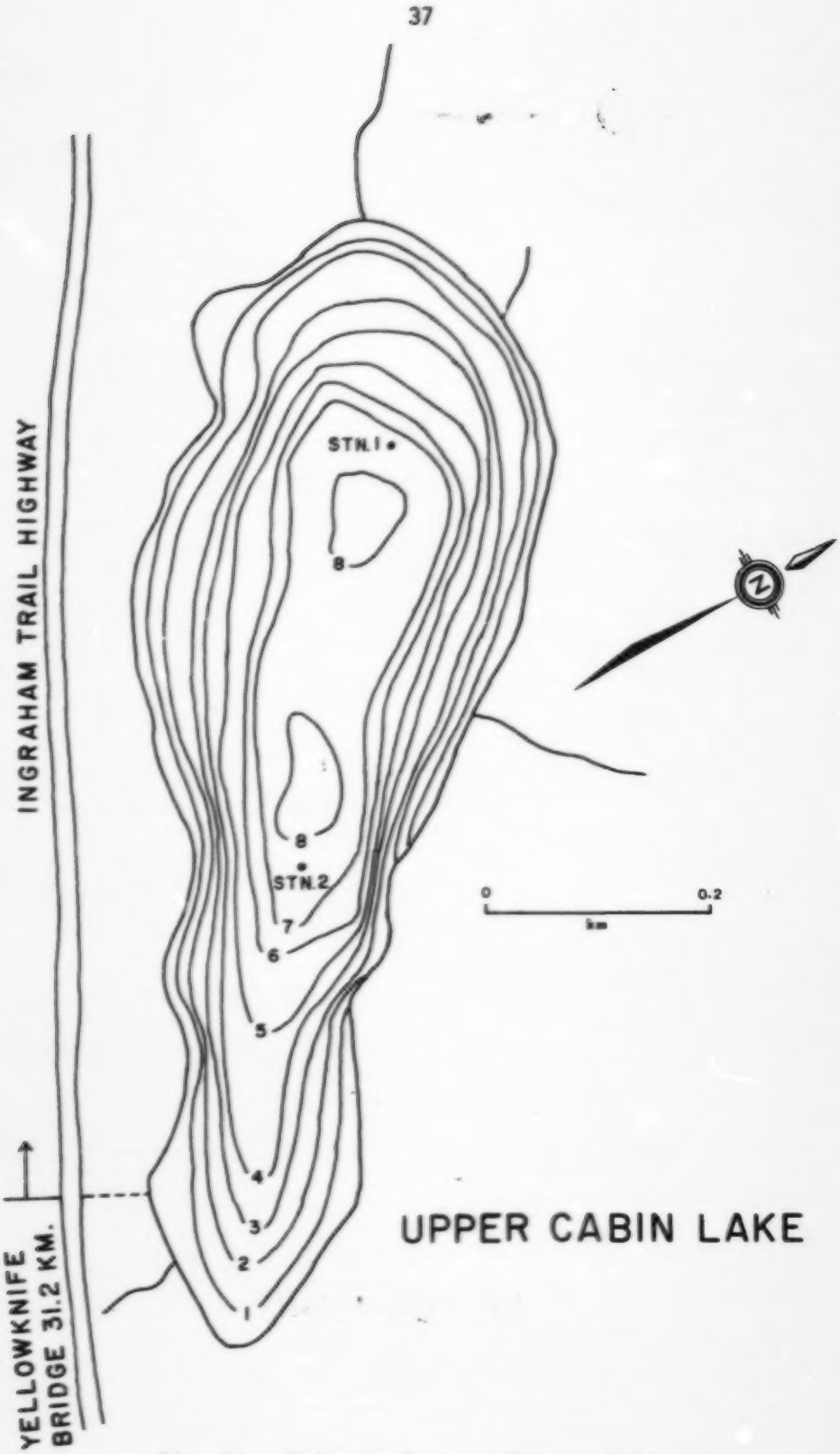


Fig. 34. Bathymetric map of Upper Cabin Lake.

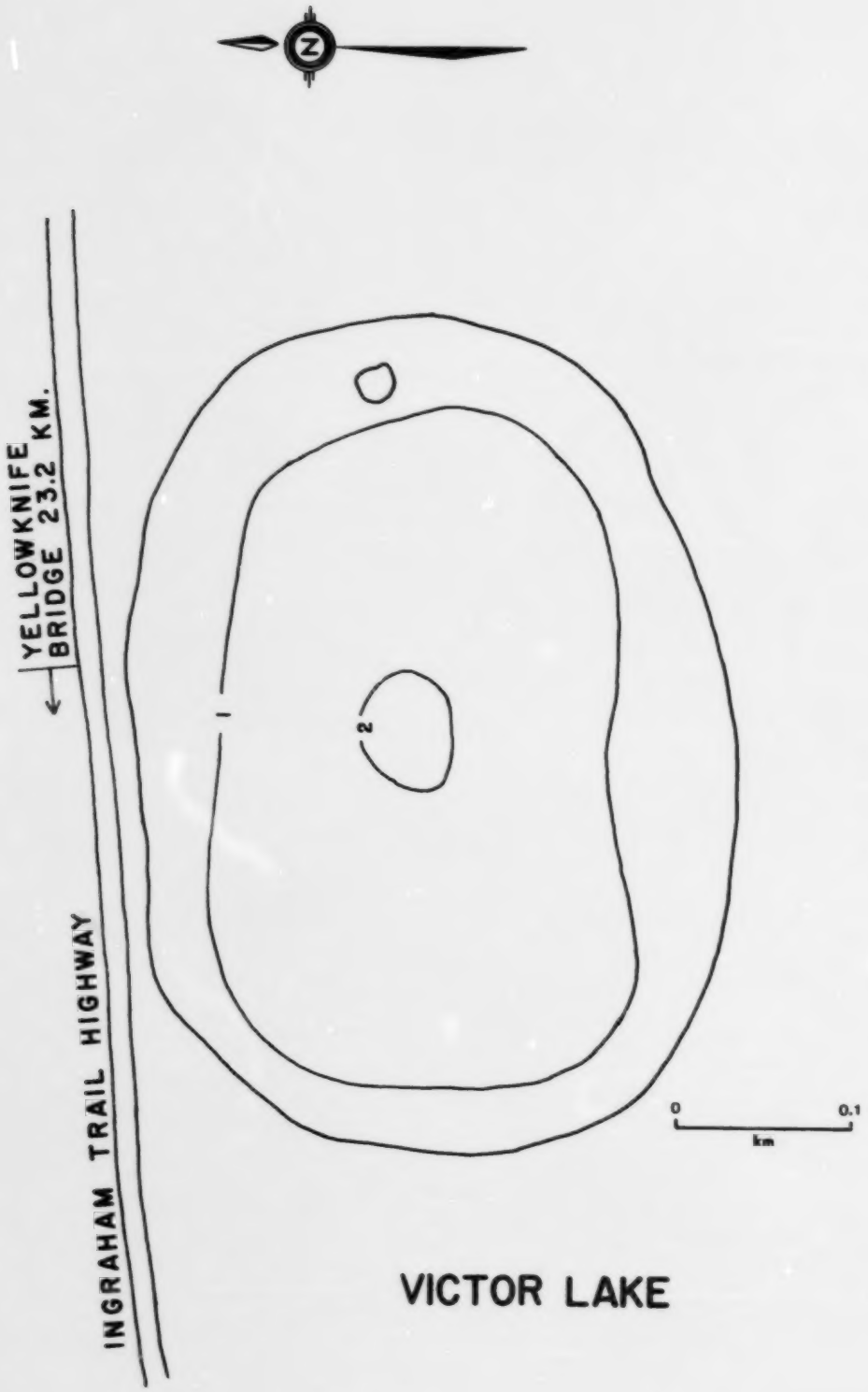


Fig. 35. Bathymetric map of Victor Lake.

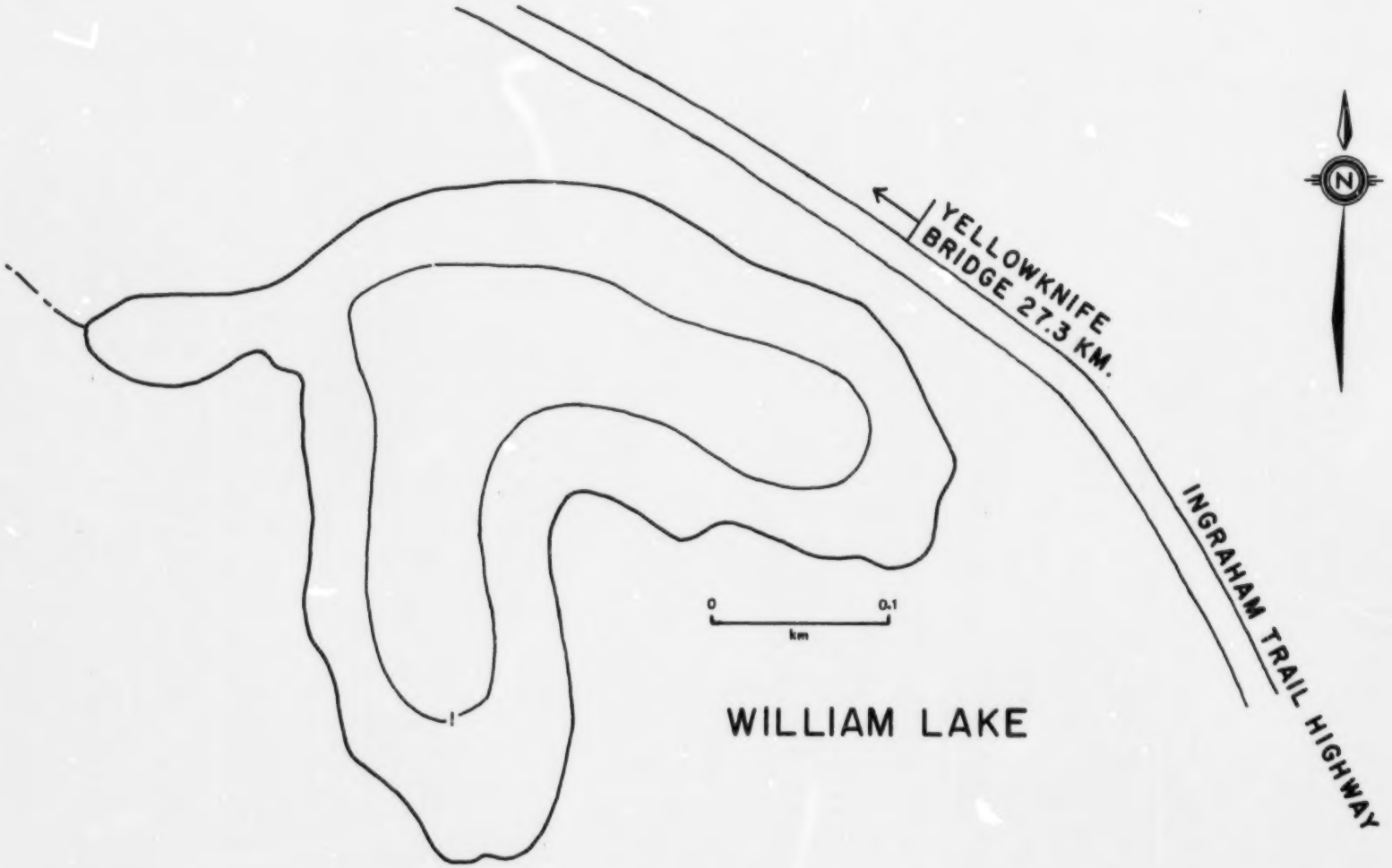
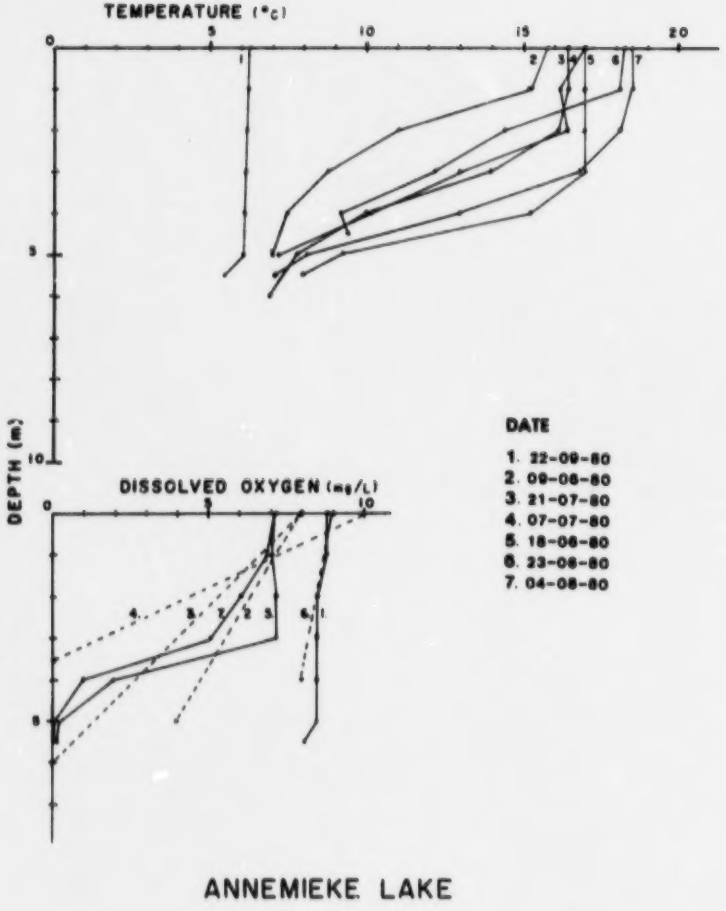


Fig. 36. Bathymetric map of William Lake.



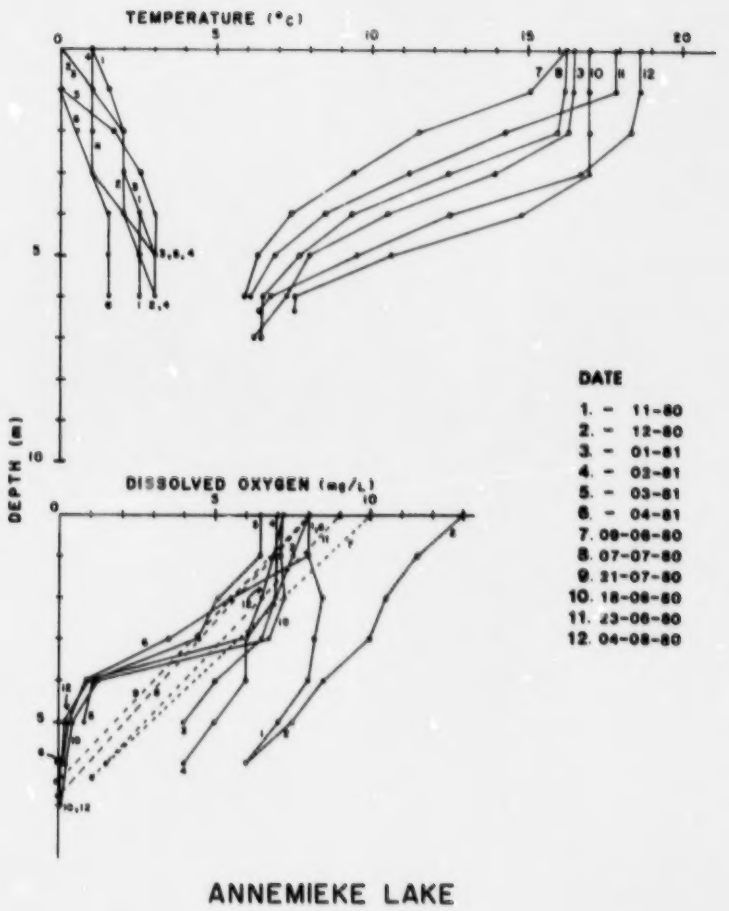


Fig. 37. Vertical profiles of temperature and dissolved oxygen for Annemieke Lake, 1980-81.

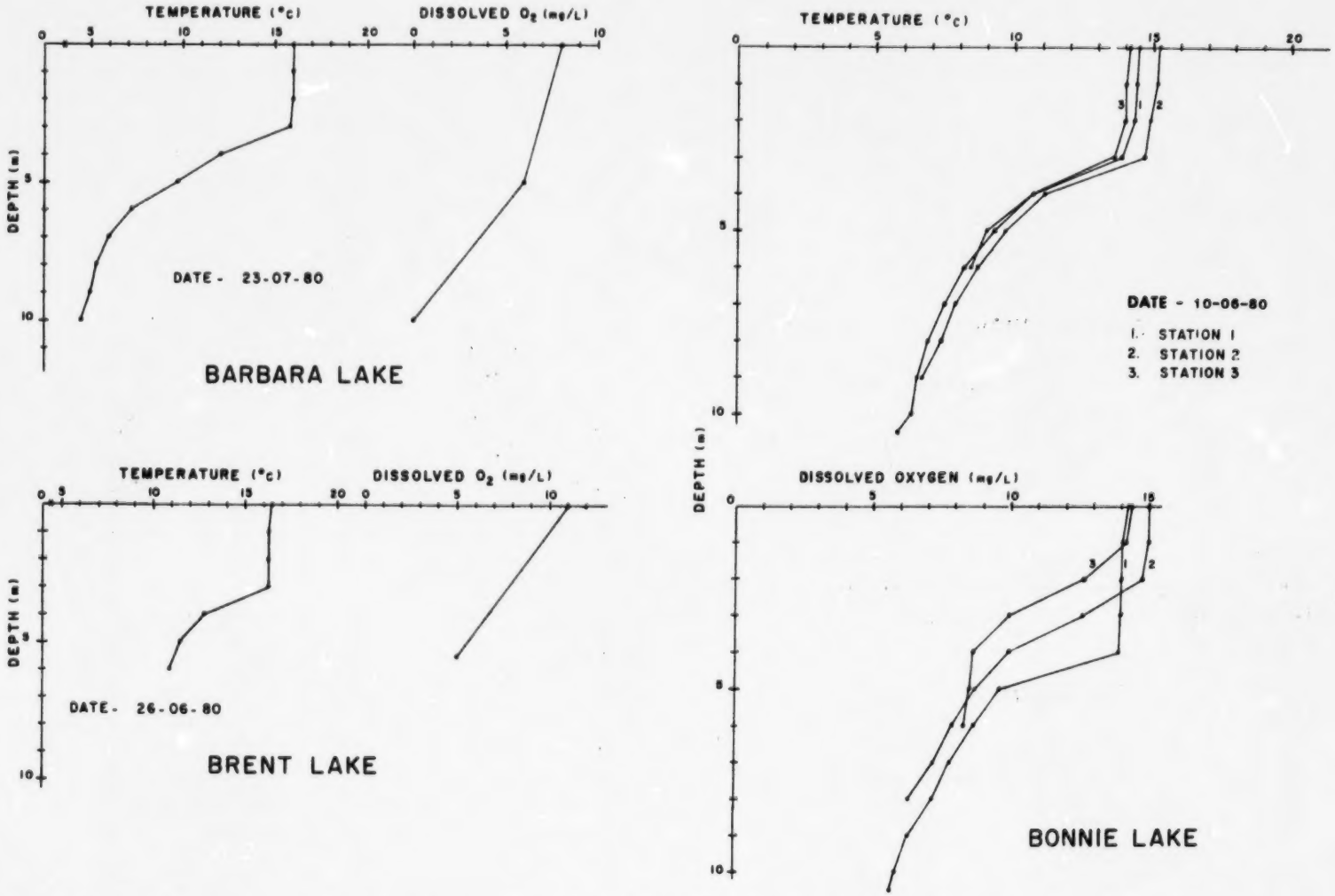


Fig. 38. Vertical profiles of temperature and dissolved oxygen for Barbara, Brent and Bonnie lakes, 1980.

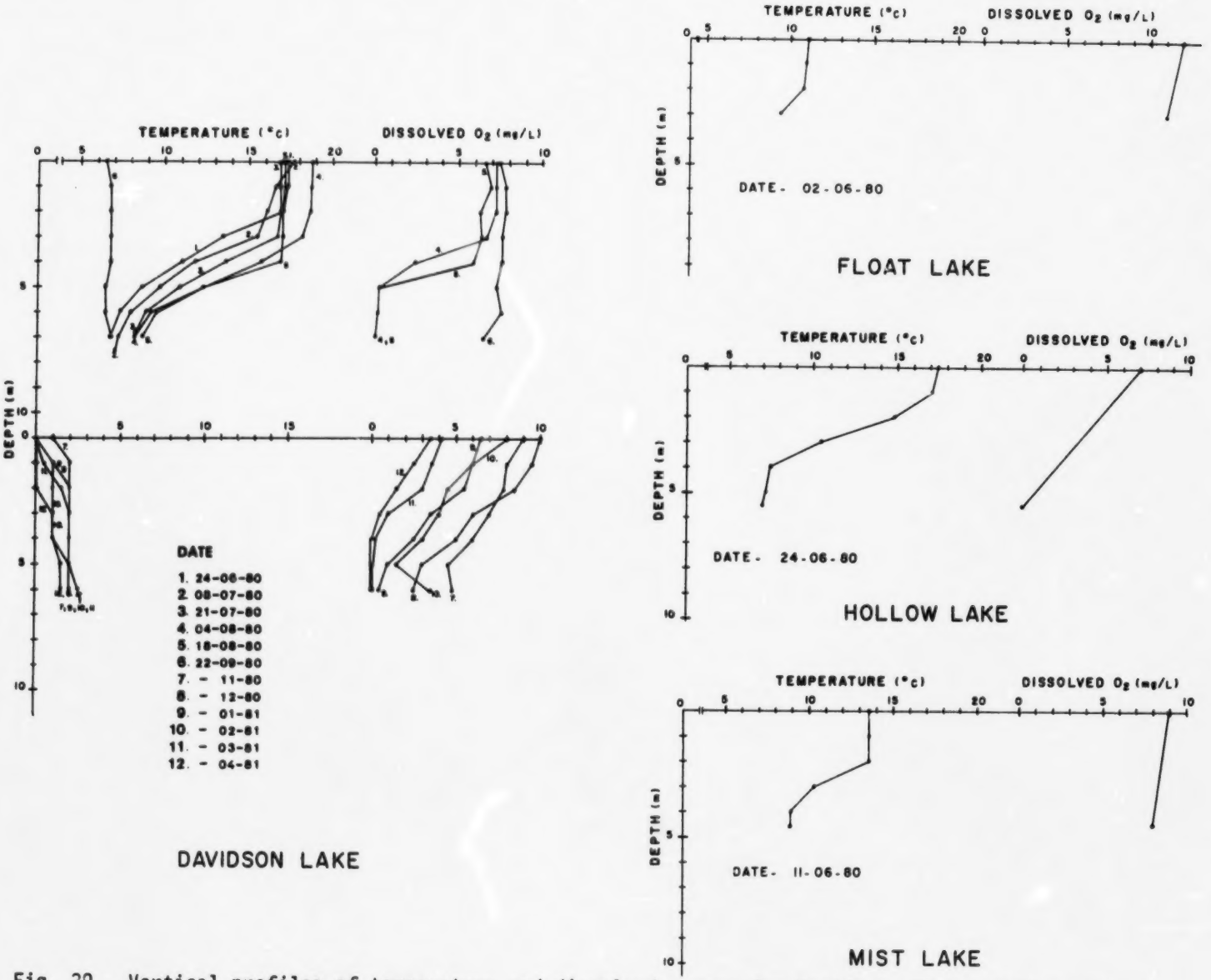


Fig. 39. Vertical profiles of temperature and dissolved oxygen for Davidson, Float, Hollow and Mist lakes, 1980-81.

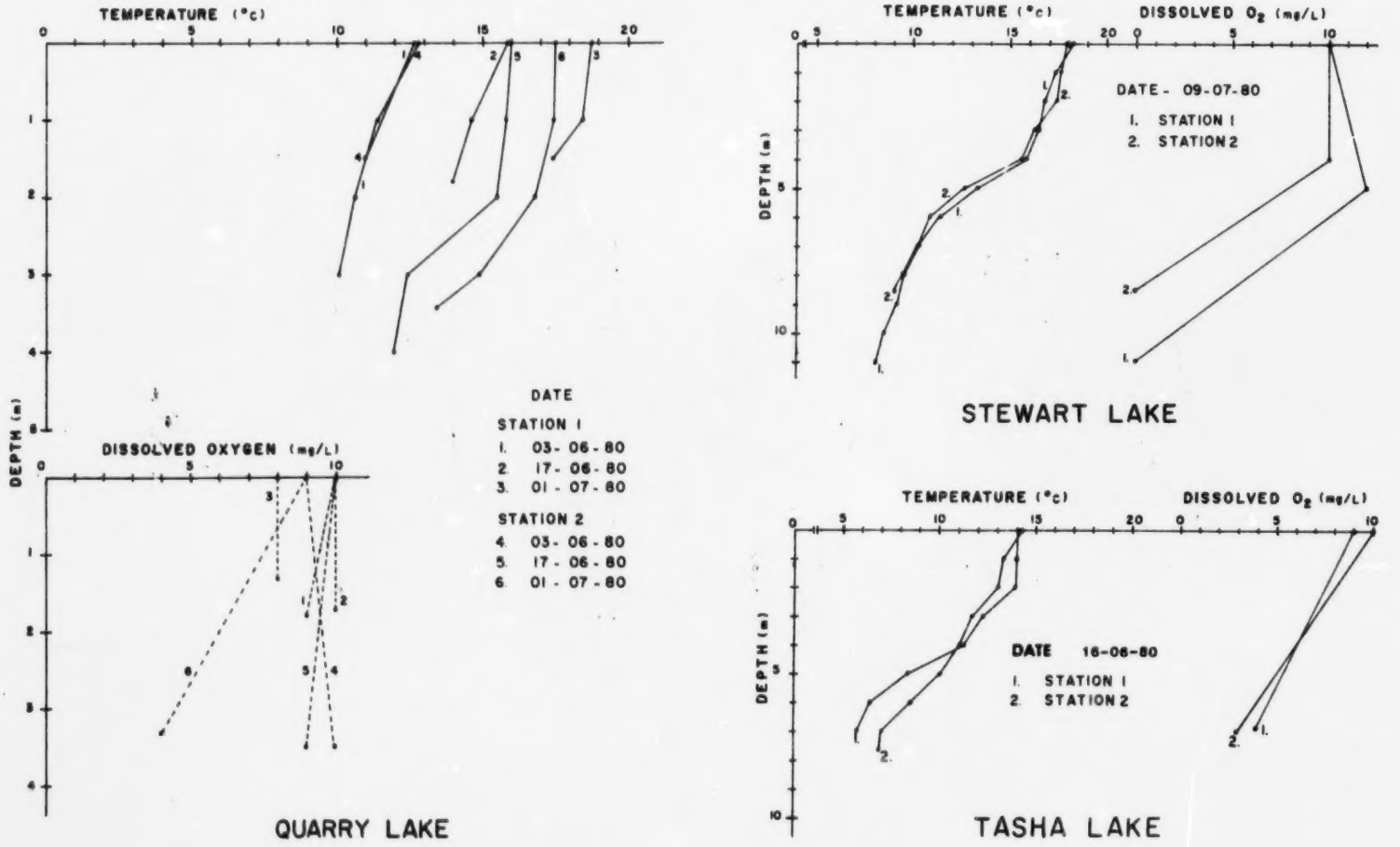
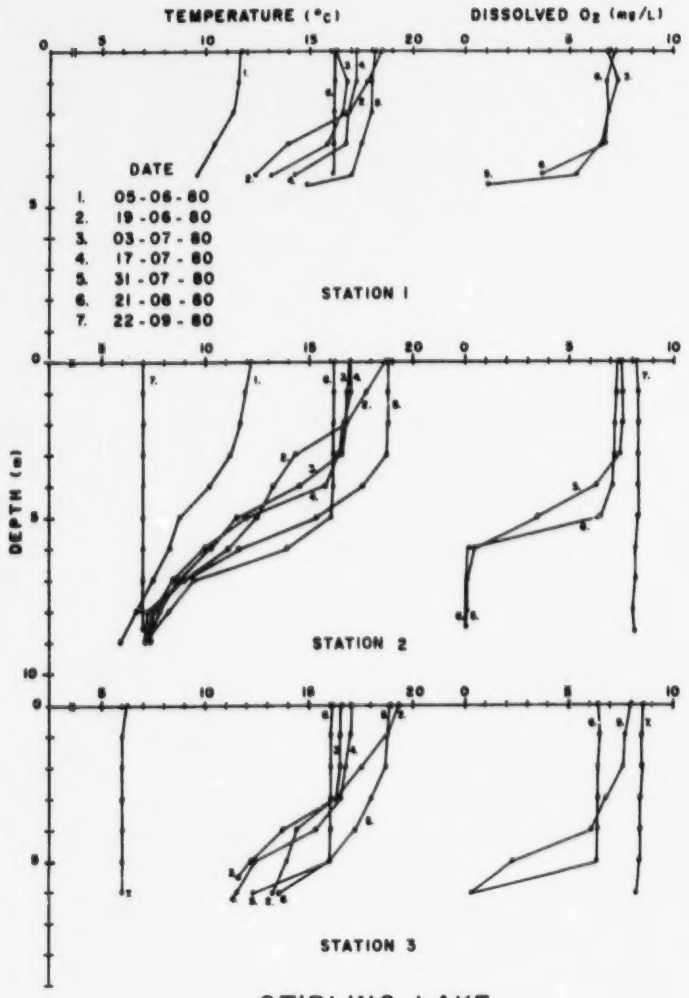


Fig. 40. Vertical profiles of temperature and dissolved oxygen for Quarry, Stewart and Tasha lakes, 1980.



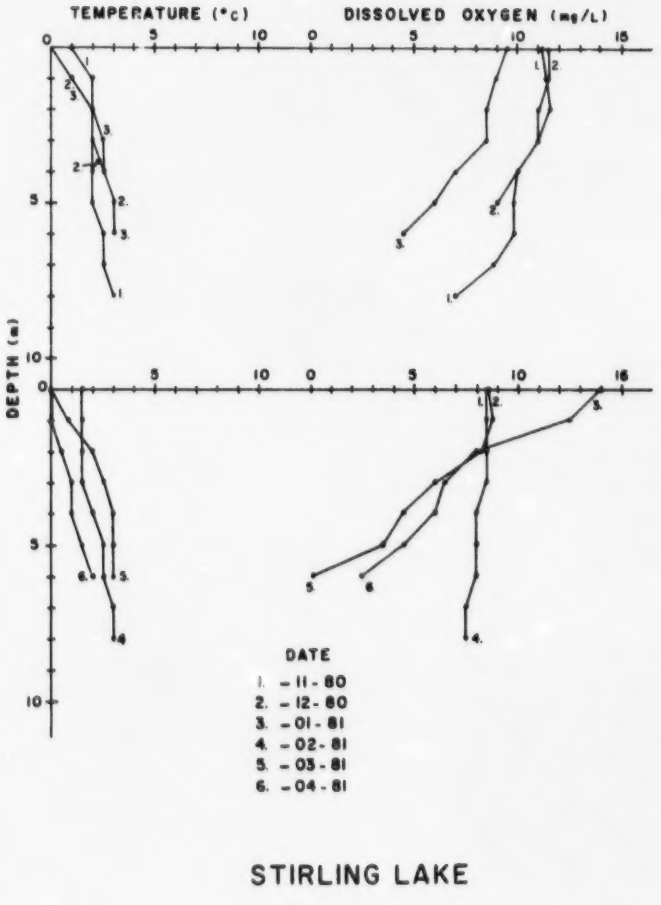
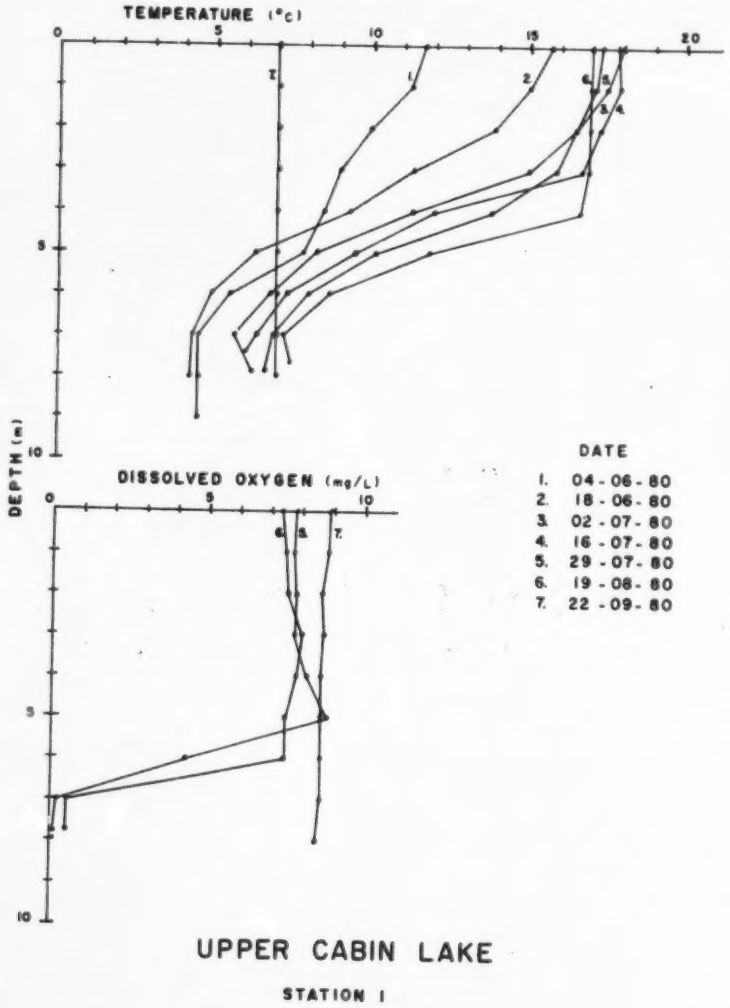


Fig. 41. Vertical profiles of temperature and dissolved oxygen for Stirling Lake, 1980-81.



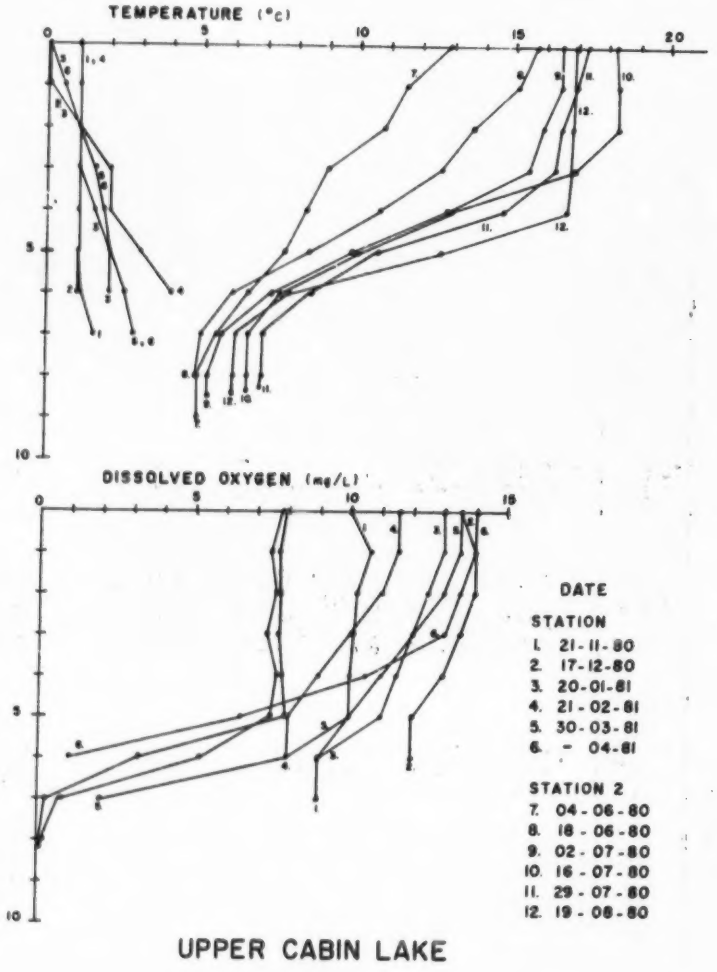


Fig. 42. Vertical profiles of temperature and dissovled oxygen for Upper Cabin Lake, 1981.

Table 1. Summary of information on location, sample dates and certain limnological features for Ingraham Trail lakes, 1979-80.

No.	Name	Location* (km)	Date Surveyed (D/M/Y)	Max† Depth (m)	Station No.	Temperature (°C) Surface	Temperature (°C) Bottom	Secchi (m)	pH
1	Split (A)	5.6	04/06/79	2.5		16.0			
2	Split (B)	5.6	04/06/79	2.5		11.2			
3	Falk	9.0	05/06/79	1.5		9.9			
4	Tom	10.0	06/06/79	2.6		10.6			
5	Spot	12.5	06/06/79	1.5		10.0			
6	Throat	13.9	12/06/79	1.0					
7	Sedge	18.1	12/06/79	N/A					
8	Tasha	19.0	16/06/79	8.0	1	14.1	6.0	3.1	8.4
					2	14.3	7.7	5.4	8.4
9	Float	19.9	02/06/80	3.1		10.9	10.2	0.5	8.9
10	Loon	20.5	22/07/80	3.0					
11	Victor	23.2	30/07/79	2.0		18.4	17.9		
12	Richard	24.6	15/07/80	2.2					
13	Rod	26.1	10/07/80	1.2					
14	William	27.3	16/07/80	1.5					
15	Bonnie	28.3	10/06/80	12.0	1	14.2	6.0	2.5	8.5
					2	15.1	6.3	2.2	
					3	14.3	8.4	2.4	
16	Mist	28.3	11/06/80	6.0		13.9	9.1	3.1	8.6
17	Quarry	28.8	03/06/80	5.0	1	12.7	11.8	0.8	
					2	12.4	10.3	0.8	
			17/06/80		1	16.0	14.0	0.8	8.5
					2	16.0	12.0	0.7	
			01/07/80		1	18.8	17.4	0.8	
					2	17.5	13.4	0.8	
18	Greater Scaup	30.1	04/06/80	1.6					
19	Lesser Scaup	30.3	04/06/80	2.5					
20	Upper Cabin	31.2	04/06/80	8.6	1	11.6	4.4	2.4	
					2	12.9	4.9	2.5	
			18/06/80		1	15.7	4.2	2.8	8.8
					2	15.7	4.8	2.8	
			02/07/80		1	18.0	6.2	2.9	7.5
					2	16.5	5.2	2.9	7.5
			16/07/80		1	17.9	6.0	2.5	
					2	18.2	6.5	2.4	
			29/07/80		1	17.3	6.0	3.5	8.1
					2	17.3	6.2	3.5	8.1
			19/08/80		1	17.0	7.4	2.5	7.7
					2	16.9	6.0	2.6	7.9
21	Lower Cabin	31.2	04/06/80	1.5					
22	Stewart	32.1	09/07/80	16.0	1	18.2	8.1	2.3	8.6
					2	18.0	9.1	2.4	
23	Hollow	33.1	18/06/80	6.8		17.4	7.0	1.4	8.1
24	Stirling	33.9	05/06/80	8.0	1	11.7	9.6	2.4	
					2	12.2	5.9	2.5	
					3	11.9	8.9	1.9	
			19/06/80		1	18.5	12.4	3.0	8.6
					2	18.7	7.1	3.2	
					3	19.3	13.2	3.8	
			03/07/80		1	16.4	13.1	2.4	8.1
					2	17.0	7.0	3.5	8.1
					3	16.7	11.6	3.4	8.2
			17/07/80		1	17.3	14.3	2.4	7.6
					2	17.0	7.3	3.1	7.8
					3	17.1	11.5	3.3	7.8
			31/07/80		1	18.2	14.8	2.2	7.9
					2	18.9	7.0	2.4	8.0
					3	18.9	12.3	2.8	7.8
			21/08/80		1	16.2	16.2	1.5	7.7
					2	16.2	7.0	1.5	7.7
					3	16.2	13.3	2.0	7.7

Table 1. Cont'd.

No.	Name	Location* (km)	Date Surveyed (D/M/Y)	Max† Depth (m)	Station	Temperature (°C) Surface	Temperature (°C) Bottom	Secchi (m)	pH
25	Annemieke	33.9	06/06/80	6.5	1	15.8	7.0	1.3	
					2	16.2	5.9	1.3	
			18/06/80		1	17.0	8.0	1.6	8.1
					2	17.0	7.5	1.5	7.9
			23/06/80		1	18.3	9.4	1.3	
					2	17.9	5.5	1.5	8.7
			07/07/80		1	17.1	7.2	1.5	8.3
					2	16.3	6.4	1.4	
			27/07/80		1	16.4	6.9	1.3	
					2	16.5	6.2	1.3	
			04/08/80		1	18.5	7.1	1.5	8.1
					2	18.7	6.1	1.3	8.1
26	Barbara	38.5	23/07/80	12.0		16.0	4.5	3.1	8.2
27	Davidson	39.5	24/06/80	8.0		17.3	6.8	3.2	8.5
			08/07/80			17.7	7.1	3.4	8.4
			21/07/80			16.9	8.3	3.5	
			04/08/80			18.8	8.2	2.7	8.0
			18/08/80			17.2	8.7	2.5	7.8
28	Mallard	40.6	18/06/80	2.4					
29	Trail	41.2	25/06/80	N/A					
30	Ceejay	41.2	26/06/80	2.0					
31	Aron	41.2	26/06/80	2.0					
32	Brent	41.2	26/06/80	7.0		16.5	10.9	3.4	8.6
33	Blake	41.7	18/06/80	2.0					
34	Lower Puddle	42.1	18/06/80	N/A					
35	Upper Puddle	42.8	18/06/80	N/A					
36	Amy	53.8	10/07/80	2.0					
37	Rob	56.5	10/07/80	N/A					
38	Boss	59.3	25/06/80	2.3					
39	Muskeg	60.0	10/06/80	3.0					
40	Peninsula	60.6	23/08/79	12.0		15.2			
41	Beaver	61.3	25/06/80	1.5					

* Measured as the distance from the Yellowknife Bridge to the lake via the road.
† N/A = not available.

Table 2. Number of fish by species caught by experimental and Swedish gillnets and minnow traps from Ingraham Trail lakes, 1979-80.

Lake	Number of fish caught						
	Lake Whitefish	Cisco	Northern Pike	Walleye	White Sucker	Lake Chub	Ninespine Stickleback
Annemieke	0	0	0	0	160*	0	0
Barbara	0	0	0	0	0	0	0
Bonnie	0	0	1	0	0	0	0
Brent	0	0	0	0	0	0	0
Davidson	0	0	0	0	0	0	0
Falk	0	0	0	0	0	0	0
Float	0	0	0	0	0	0	0
Hollow	0	0	0	0	0	0	0
Mist	0	0	32	0	0	0	0
Peninsula	62	1	4	19	22	0	0
Quarry	0	0	0	0	0	0	0
Split (B)	0	0	0	0	0	0	0
Spot	0	0	0	0	0	0	0
Stewart	16	0	24	12	0	0	0
Stirling	8	0	0	0	0	0	0
Tasha	13	16	6	0	0	0	0
Tom	0	0	0	0	0	0	0
Upper Cabin	0	0	0	0	0	373	26
Victor	0	0	0	0	0	0	0

* Includes longnose suckers.

Table 3. Catch and size data for fish caught by experimental gillnets from Bonnie Lake, 1980.

Species	Mean Length (mm)	Mean Weight (g)		Mesh Size 1.5 (in) 38 (mm)	2.5 64	3.5 89	4.5 114	5.5 139	Total	Duration (hours)	CPE*
Northern Pike	533	1 100	No.	1	-	-	-	-	1	23.5	0.3
			%	100.0	-	-	-	-	100.0		
Total				1					1		0.3

* Catch per unit effort (No. fish per 100 m of gillnet per 24 hours).

Table 4. Catch and size data for fish caught by experimental gillnets from Mist Lake, 1980.

Species	Mean Length (mm)	Mean Weight (g)		Mesh Size 1.5 (in) 38 (mm)	2.5 64	3.5 89	4.5 114	5.5 139	Total	Duration (hours)	CPE*
Northern Pike	504	1 013	No.	1	12	19	-	-	32	22.5	22.8
			%	3.1	37.5	59.4	-	-	100.0		
Total				1	12	19			32		22.8

* Catch per unit effort (No. fish per 100 m of gillnet per 24 hours).

Table 5. Catch and size data for fish caught by experimental gillnets from Peninsula Lake, 1979.

Species	Mean Length (mm)	Mean Weight (g)		Mesh Size 1.5 (in) 38 (mm)	2.5 64	3.5 89	4.5 114	5.5 139	Total	Duration (hours)	CPE*
White Sucker	421	1 132	No.	-	1	6	6	1	14	17.5	15.4
			%	-	7.1	42.9	42.9	7.1	20.3		
Lake Whitefish	400	809	No.	5	5	5	19	8	42	17.5	46.1
			%	11.9	11.9	11.9	45.2	19.1	60.9		
Cisco	169	50	No.	1	-	-	-	-	1	17.5	1.1
			%	100.0	-	-	-	-	1.5		
Northern Pike	528	983	No.	-	1	1	1	-	3	17.5	3.3
			%	-	33.3	33.3	33.3	-	4.4		
Walleye	448	864	No.	-	3	5	1	-	9	17.5	9.9
			%	-	33.3	55.6	11.1	-	13.0		
Total				6	10	17	27	9	69		75.7

* Catch per unit effort (No. fish per 100 m of gillnet per 24 hours).

Table 6. Catch and size data for fish caught by experimental gillnets from Peninsula Lake, 1979.

Species	Mean Length (mm)	Mean Weight (g)		Mesh Size 3.5 in 89 mm	Mesh Size 4.5 in 114 mm	Total	Duration (hours)	CPE*
White Sucker	450	-	No.	-	8	8	16.5	11.6
			%	-	100.0	20.5		
Lake Whitefish	413	927	No.	8	12	20	16.5	29.1
			%	40.0	60.0	51.3		
Northern Pike	547	1 180	No.	1	-	1	16.5	1.5
			%	100.0	-	2.6		
Walleye	413	772	No.	10	-	10	16.5	14.6
			%	100.0	-	25.6		
Total				19	20	39		56.7

* Catch per unit effort (No. fish per 100 m of gillnet per 24 hours).

Table 7. Catch and size data for fish caught by experimental gillnets from Stewart Lake, 1980.

Species	Mean Length (mm)	Mean Weight (g)		Mesh Size 1.5 (in) 38 (mm)	2.5 64	3.5 89	4.5 114	5.5 139	Total	Duration (hours)	CPE*
Lake Whitefish	418	1 059	No.	6	2	3	3	2	16	23.5	6.5
			%	37.5	12.5	18.8	18.8	12.5	30.8		
Northern Pike	466	654	No.	2	19	2	1	-	24	23.5	9.8
			%	8.3	79.2	8.3	4.2	-	46.2		
Walleye	367	585	No.	5	2	2	3	-	12	23.5	4.9
			%	41.7	16.7	16.7	25.0	-	23.1		
Total				13	23	7	7	2	52		21.2

* Catch per unit effort (No. fish per 100 m of gillnet per 24 hours).

Table 8. Catch and size data for fish caught by experimental gillnets from Stirling Lake, 1980.

Species	Mean Length (mm)	Mean Weight (g)		Mesh Size 1.5 38	2.5 64	3.5 89	4.5 114	5.5 (in) 139 (mm)	Total	Duration (hours)	CPE*
Lake Whitefish	540	2 950	No.	1	2	-	5	-	8	19.5	3.9
			%	12.5	25.0	-	62.5	-	100.0		
Total				1	2	-	5	-	8		3.9

* Catch per unit effort (No. fish per 100 m of gillnet per 24 hours).

Table 9. Catch and size data for fish caught by experimental gillnets from Tasha Lake, 1980.

Species	Mean Length (mm)	Mean Weight (g)		Mesh Size 1.5 38	2.5 64	3.5 89	4.5 114	5.5 (in) 139 (mm)	Total	Duration (hours)	CPE*
Lake Whitefish	504	1 792	No.	2	6	3	2	-	13	21.0	5.9
			%	15.4	46.2	23.1	15.4	-	37.1		
Cisco	182	88	No.	16	-	-	-	-	16	21.0	7.3
			%	100.0	-	-	-	-	45.7		
Northern Pike	643	1 933	No.	2	1	3	-	-	6	21.0	2.7
			%	33.3	16.7	50.0	-	-	17.1		
Total				20	7	6	2	-	35		16.0

* Catch per unit effort (No. fish per 100 m of gillnet per 24 hours).

Table 10. Length composition of cisco, white sucker, and walleye from Ingraham Trail lakes, 1979-80.

Length Interval (mm)	Cisco				White Sucker		Walleye			
	Lake Tasha		Peninsula Lake		Peninsula Lake		Peninsula Lake		Stewart Lake	
	No.	%	No.	%	No.	%	No.	%	No.	%
120 - 139	-	-	-	-	-	-	-	-	-	-
140 - 159	3	18.8	-	-	-	-	-	-	-	-
160 - 179	3	18.8	1	100.0	-	-	-	-	-	-
180 - 199	8	50.0	-	-	-	-	-	-	-	-
200 - 219	2	12.5	-	-	-	-	-	-	-	-
220 - 239	-	-	-	-	-	-	-	-	-	-
240 - 259	-	-	-	-	-	-	-	-	-	-
260 - 279	-	-	-	-	-	-	-	-	3	25.0
280 - 299	-	-	-	-	-	-	-	-	-	-
300 - 319	-	-	-	-	-	-	-	-	-	-
320 - 339	-	-	-	-	-	-	-	-	2	16.8
340 - 359	-	-	-	-	-	-	1	5.9	2	16.8
360 - 379	-	-	-	-	1	6.7	1	5.9	-	-
380 - 399	-	-	-	-	1	6.7	1	5.9	1	8.3
400 - 419	-	-	-	-	4	26.7	4	23.5	-	-
420 - 439	-	-	-	-	1	6.7	5	29.4	1	8.3
440 - 459	-	-	-	-	3	20.0	1	5.9	1	8.3
460 - 479	-	-	-	-	3	20.0	2	11.8	1	8.3
480 - 499	-	-	-	-	1	6.7	2	11.8	1	8.3
500 - 519	-	-	-	-	1	6.7	-	-	-	-
Total	16		1		15		17		12	

Table 11. Length composition of lake whitefish from Ingraham Trail lakes, 1979-80.

Length Interval (mm)	Lake Tasha		Peninsula Lake		Stirling Lake		Stewart Lake	
	No.	%	No.	%	No.	%	No.	%
260 - 279	-	-	1	1.8	-	-	-	-
280 - 299	-	-	1	1.8	-	-	-	-
300 - 319	-	-	-	-	-	-	1	6.3
320 - 339	-	-	1	1.8	-	-	-	-
340 - 359	-	-	1	1.8	-	-	-	-
360 - 379	-	-	4	7.0	-	-	-	-
380 - 399	-	-	11	19.3	-	-	-	-
400 - 419	-	-	17	29.8	-	-	6	37.5
420 - 439	1	7.7	15	26.3	-	-	6	37.5
440 - 459	1	7.7	5	8.8	-	-	3	18.8
460 - 479	2	15.4	1	1.8	-	-	-	-
480 - 499	-	-	-	-	1	12.5	-	-
500 - 519	4	30.8	-	-	1	12.5	-	-
520 - 539	3	23.1	-	-	1	12.5	-	-
540 - 559	2	15.4	-	-	4	50.0	-	-
560 - 579	-	-	-	-	1	12.5	-	-
580 - 599	-	-	-	-	-	-	-	-
Total	13		57		8		16	

Table 12. Length composition of northern pike from Ingraham Trail lakes, 1979-80.

Length Interval (mm)	Bonnie Lake		Mist Lake		Lake Tasha		Peninsula Lake		Stewart Lake	
	No.	%	No.	%	No.	%	No.	%	No.	%
260 - 279	-	-	1	3.1	-	-	-	-	-	-
280 - 299	-	-	-	-	-	-	-	-	-	-
300 - 319	-	-	-	-	-	-	-	-	-	-
320 - 339	-	-	-	-	-	-	-	-	-	-
340 - 359	-	-	1	3.1	-	-	-	-	-	-
360 - 379	-	-	-	-	-	-	-	-	1	4.2
380 - 399	-	-	-	-	-	-	-	-	2	8.3
400 - 419	-	-	-	-	-	-	-	-	1	4.2
420 - 439	-	-	-	-	-	-	-	-	8	33.3
440 - 459	-	-	-	-	-	-	-	-	1	4.2
460 - 479	-	-	1	3.1	-	-	-	-	2	8.3
480 - 499	-	-	3	9.4	1	16.7	-	-	1	4.2
500 - 519	-	-	12	37.5	-	-	1	25.0	2	8.3
520 - 539	1	100.0	10	31.3	-	-	1	25.0	3	12.5
540 - 559	-	-	3	9.4	-	-	2	50.0	1	4.2
560 - 579	-	-	1	3.1	-	-	-	-	1	4.2
580 - 599	-	-	-	-	-	-	-	-	1	4.2
600 - 619	-	-	-	-	-	-	-	-	-	-
620 - 639	-	-	-	-	1	16.7	-	-	-	-
640 - 659	-	-	-	-	2	33.3	-	-	-	-
660 - 679	-	-	-	-	1	16.7	-	-	-	-
680 - 699	-	-	-	-	-	-	-	-	-	-
700 - 719	-	-	-	-	-	-	-	-	-	-
720 - 739	-	-	-	-	-	-	-	-	-	-
740 - 759	-	-	-	-	-	-	-	-	-	-
760 - 779	-	-	-	-	1	16.7	-	-	-	-
780 - 799	-	-	-	-	-	-	-	-	-	-
Total	1		32		6		4		24	

POOR

QUALITY

ORIGINAL